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Colorado Professionals' Concerns, Abilities, and Needs for Land Use Planning

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Abstract

Colorado professionals with agriculture and natural resource managing responsibilities were surveyed on issues of growth. Their greatest concerns were water quality, water quantity, and agricultural profitability. Of least concern were large lot, low-density development, affordable housing, and forestland conversion. Respondents reported the greatest knowledge of fee simple land purchases, zoning, and conservation easements, and the least knowledge of water banking or trusts, "bargain" lands sales, and moratoria. They indicated the greatest interest in an overview of land management tools, conservation easements, and public-private partnerships, and the least interest in educational programming related to moratoria, development timing, and housing land trusts.

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Introduction

The state of Colorado is in a period of uncommon prosperity and economic growth. Five of the 10 fastest growing counties in percentage terms in the United States are found in Colorado (Edelman, Roe, & Patton, 1999). Colorado's population increased by 1/4 to more than 4 million between 1990 and 1999 (CDLG, 1999). As a result of this growth, nearly 1.5 million acres of agricultural land were converted between 1992 and 1997 (USDA, 1999). However, while most of the Colorado economy is growing, the agricultural economy is in a period of decline. In this climate of disparate economic opportunity, land (and other natural resource) use and planning pose particular challenges to the people and communities of Colorado.

Growth and change have created additional challenges and opportunities for many Colorado communities. Recent research has shown that growth, budgetary concerns, and economic development needs are the most pressing county-level issues in Colorado. Land use issues and increasing demands on social services, particularly for aging and immigrant resident populations, were shown to be the most challenging growth concerns facing Colorado counties (CDLG, 1999).

Tools and strategies exist for communities to plan for and guide their futures. A variety of public and private, state, federal, and local agencies might provide training, insight, or information to their clientele or constituencies regarding the tools and strategies available to them to manage their natural resources toward both private and collective objectives.

Approach

In the spring of 1999, a skills, abilities, and needs assessment of Colorado professionals with agriculture and natural resource managing responsibilities was undertaken. Colorado State University Cooperative Extension, Colorado State Forest Service, and American Farmland Trust agreed to collaborate on survey design, mailing lists, finance, analysis, dissemination of results, and follow-up programming from this research effort.

A comprehensive mailing list of the individuals employed by the following organizations was

compiled:

- County Commissioners;
- Representatives of the Ute Mountain Ute and the Southern Ute Indian tribes;
- Members of the Colorado Rural Development Council;
- Colorado-based personnel of the four agencies of the U.S. Department of Agriculture (i.e., Rural Development, Farm Service Association, Natural Resource Conservation Service, and Resource Conservation and Development);
- Bureau of Land Management;
- U.S. Forest, Parks and Fish and Wildlife Services;
- Colorado State Forests, Parks, and Department of Local Affairs;
- Cooperative Extension and Community College personnel;
- County assessors and real estate appraisers;
- Bankers, lenders, and independent consultants;
- Representatives of farmers' and ranchers' organizations;
- Environmentally oriented non-governmental organizations; and
- Land trusts.

In the end, 822 six-page surveys were mailed, and the Dilman (1972) method was followed with one adaptation. An overall return rate of 67% (550 usable surveys) was reached, employing the common adaptation of the inclusion of a \$1 courtesy incentive for completion of the survey in the first mailing to all recipients except Extension personnel.

In accordance with the methodology, the first mailing (introductory letter, survey, and \$1) was followed by a postcard reminder to nonrespondents after 2-3 weeks, which was followed by a second survey mailing (reminder letter, and survey) to remaining nonrespondents after 2-3 additional weeks. Two clear "protest" surveys were received, and 16 surveys were returned as "undeliverable."

In addition to demographic information, respondents were queried regarding their:

1. Degree of concern over identified growth issues (16 statements);
2. Knowledge of common growth management tools and agricultural land and open space preservation tools, and comprehensive strategic planning and visioning tools (27 statements);
3. Interest in educational programming on each of the statements in found in part 2 (27 statements); and
4. Educational preferences for media, location, duration, cost, format, etc. (30 statements).

The overall mean responses to Parts 1-3 above are reported in this article. In Parts 1-3, respondents were asked to reflect their preferences on a 7-point Likert scale. On this scale, "1" indicates strongly disinterested, unlikely, or unconcerned; "4" reflects a neutral response; and "7" indicates strongly interested, highly likely, or highly concerned. In addition, the relative ranks of mean responses to each statement within a category (i.e., concerns, knowledge and skills, interests, and needs) are reported. On this scale, "1" indicates highest ranking response within a category, and each number higher reflects an ordinal step lower in mean response (Seidl, 2000).

Results

Concerns

Respondents were asked to gauge the degree of concern of their clientele on 16 dimensions. All mean responses were greater than 4, indicating that there was some overall concern for all of the dimensions queried. The greatest concerns were water quality, water quantity, and agricultural profitability, in decreasing rank order. The areas of least concern were large lot, low-density development, affordable housing, and forestland conversion, in increasing rank order (Table 1).

Responses to four pairs of factors were strongly statistically predictive of one another in the overall results. Responses to client concerns over wildlife habitat conversion and forestland conversion were highly positively correlated (Pearson=0.66, $p<0.01$) as was open space preservation (Pearson=0.55, $p<0.01$). Concerns over open space preservation were highly positively correlated with the preservation of public outdoor recreation (Pearson=0.55, $p<0.01$) and large lot, low-density development (Pearson =0.52, $p<0.01$).

Mean responses clustered into seven categories of responses. Water quantity stood alone as the greatest concern. However, water quality, agricultural profitability, and preservation of rural lifestyle formed a statistically similar group of strong secondary concerns. Agricultural land conversion and public finance issues fell into the third response cluster. At the other end of the scale, forestland conversion stood alone as an area of least concern to respondents in the state of Colorado.

Table 1
Overall Results, Concerns

How concerned are your clientele about...	Mean	St. Dev.	Rank	Cluster
Rural/urban sprawl	5.11	1.73	7	4
Agricultural profitability	5.78	1.61	3	2
Land speculation	4.99	1.45	10	4,5
Agricultural land conversion	5.50	1.36	5	3
Forest land conversion	4.58	1.86	14	7
Wildlife habitat conversion	5.07	1.57	9	4,5
Multi-jurisdictional planning	4.83	1.44	13	6
Public finance (e.g., schools, roads)	5.42	1.33	6	3
Open space preservation	4.99	1.71	11	4,5
Affordable housing	4.68	1.60	15	6,7
Preservation of public outdoor recreation	4.92	1.55	12	5,6
Large lot, low density development	4.44	1.61	16	7
Air quality	5.10	1.46	8	4
Water quality	5.82	1.20	2	2
Water quantity	6.03	1.12	1	1
Preservation of the "rural lifestyle."	5.66	1.32	4	2
Scores reported on a 7-pt. Likert scale where 1=not concerned, 4=neutral, 7=very concerned. Largest possible number of responses = 550. Ranking of scores are 1=highest to 16=lowest mean score. Clusters are statistically distinct rankings ($p < 0.05$) where 1=highest mean score and 7=lowest mean score. Mean rankings within each cluster are statistically equivalent.				

Knowledge and Skills

Among the purposes of this survey was to gauge the level of knowledge and ability of surveyed individuals in using common land use planning and management tools. This assessment was intended to identify sources of expertise in Colorado, to indicate whether an educational programming effort might be useful, and to determine at what level of expertise it ought to be targeted. This approach should improve both the appropriateness and efficiency of educational programming efforts in the land use-planning arena.

Respondents rated their knowledge and skill base on 27 dimensions related to land and other natural resource use and planning. Most (21) of factors evaluated could be categorized as legal "tools." Several (5) of the variables evaluated could be seen as social policy, planning, or visioning approaches. One statement solicits an overall or overview assessment (Table 2).

Only seven factors received neutral to positive knowledge and skill ratings by respondents. Overall, respondents felt that they possessed the greatest knowledge of fee simple land purchases, zoning, and conservation easements relative to the other 24 variables. Respondents indicated the least knowledge of water banking or trusts, "bargain" lands sales, and moratoria.

Except for strategic planning (4.41 mean score, 5 rank), knowledge of social process variables all had a mean score tending toward a lack of knowledge (< 4.00). Three of the five social process variables received knowledge and skill ratings ranking below the midpoint (i.e., civic participation and dialogue approaches, ranked 14th; innovative public-private partnerships, 16th; and holistic framing of public issues, 24th) (Table 2).

Interests and Needs

Knowledge and skill information can be combined with needs and interest information to determine the primary thrust and level of information communicated in educational efforts. Respondents were asked to rate their degree of interest in receiving educational materials on the same factors on which they provided their level of knowledge.

On average, respondents were neutral to positive regarding interest in educational programming on 18 of the 27 criteria, including all of the social process variables (Table 2). Respondents indicated the greatest interest in programs or material on an overview of land management tools, conservation easements, and public-private partnerships, in decreasing rank of preference. They indicated the least interest in educational programming related to moratoria, development timing, and housing land trusts, in increasing rank of preference (Table 2).

Table 2
Overall Results, Mean Scores and Relative Rankings

How knowledgeable are you on... How interested are you in an educational programming on...	Knowledge & Skills		Needs & Interests	
	Mean	Rank	Mean	Rank
Strategic planning	4.41	5	4.35	8
Land purchases	4.71	1	4.23	10
Purchase of Development Rights (PDR)	3.79	13	4.06	16
Land banking	3.72	15	4.02	18
Zoning (e.g., agricultural, performance)	4.64	2T	4.52	5
Cluster Development	3.87	8T	3.84	22
Planned Unit Development (PUD)	3.87	8T	3.77	24
Capital Improvement Programming (CIP)	3.24	21T	3.86	20T
Impact fees and exactions	3.37	20	3.88	19
Development timing (phased)	3.40	19	3.68	26
Cooperative agreements (e.g., tax-base sharing)	3.24	21T	4.05	17
Environmental impact statements (EIS)	4.49	4	4.21	11
Moratoria	2.99	27	3.38	27
Tax credits	3.63	17	4.10	14
Special designations	3.25	23	3.80	23
"Bargain" land sales	3.00	26	3.86	20T
Conservation easements	4.64	2T	4.81	2
Transferable Development Rights (TDR)	3.50	18	4.27	9
Land trusts	4.07	7	4.43	6T
Water banking/trusts	3.17	25	4.47	4
Housing land trusts	2.80	12	3.71	25
Outright donations of property	3.83	10	4.17	13
Innovative private-public partnerships	3.71	16	4.68	3
Holistic framing of public issues	3.18	24	4.07	15
Civic participation and dialogue approaches	3.75	14	4.18	12
Multi-jurisdictional or regional planning approaches	3.82	11	4.43	6T
Overall land & other natural resource planning tools	4.39	6	4.98	1
Scores reported on a 7-pt. Likert scale where 1=no interest, 4=neutral, 7=very interested. Rank of 1 is highest. Largest possible number of responses = 550.				

These results may help to improve the efficiency and effectiveness of educational efforts. For example, the low level of knowledge of public-private partnerships coupled with high desire for information indicates that introductory educational programming in this area might be well received. Similarly, the low level of knowledge of moratoria coupled with a low desire for more information indicates that an identified knowledge gap is likely to be inadequate to motivate educational efforts. The high level of knowledge and highly ranked desire for information on conservation easements indicates that educational efforts on the topic should be targeted to relative experts to be useful.

Concluding Remarks

Among those principally charged with providing information and educational programming on natural resource topics is Cooperative Extension and the Land Grant University system. The

mission of Colorado State Cooperative Extension is "to provide information and education, and encourage the application of research-based knowledge in response to local, state, and national issues affecting individuals, youth, families, agricultural enterprises, and communities of Colorado." Is land use planning, broadly termed, an appropriate topical area for Colorado Cooperative Extension programming?

Largely, the traditional role of Extension has been to focus on the profitability of agricultural operations, presuming that agricultural profitability was pivotal to the viability of rural communities. Increasingly, the benefits of diversifying a community's economic portfolio, coupled with the potentially detrimental impact of agricultural industrialization on small rural economies, have prompted Coloradans to look toward alternative means of capturing the private and social benefits of agricultural lands.

The evaluation of these alternatives is complex, research intensive, and, often, divisive. Clearly, Cooperative Extension has a role in providing relevant information, planning and issue framing support to these important community and individual decisions of rural Coloradans.

This survey provides an essential first step toward cost-effective and useful educational programming on land use planning topics in the state of Colorado. It identifies areas of relative skill and ability, areas of relative need, and areas of relative concern. With this information, Cooperative Extension and other educationally oriented private and public agencies can hope to better serve our clientele.

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