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#### SOME GENERAL NOTES ABOUT THE COURSE

This course is designed to help you deal more effectively with decisions that you may encounter as a technician, administrator, or advisor associated with agricultural and rural change agencies. The intent is not to make a sophisticated analyst out of you, or to burden you with a lot of facts or answers about the "best" ways to design programs. Rather, the hope is that you will come away from this course with greater sensitivity to important socioeconomic considerations in program planning and implementation, a more systematic thought-pattern for diagnosing action possibilities and evaluating alternatives, and an exposure to some creative ideas in program content, organization, and analysis.

A course outline is attached. I will give you thumbnail sketches of the key points to be covered under each topic. These, along with a limited number of core readings, will be used as points of departure for further elaboration, illustration, and discussion in class sessions. Interspersed with these will be a few "let-their-hair-down" sessions with persons who have had firsthand experience with program planning and administration here and abroad.

To help you apply and synthesize course content, there will be some hand-in exercises related to diagnosis of needs, action possibilities, priorities, implementation steps, etc. These will be returned to you with comments for you to blend together in the form of a report at the end of the term. In these exercises and the report, you will be focusing on a program of special interest to you individually-- e.g., a program that you have worked with previously or may be working with in the future.

Also to help relate things to your particular interests, you will be asked to do five "personal exploratory readings"--chapters in books, articles, etc. They could represent further elaboration of core analytical content and/or applications to programs of special interest to you. For each personal exploratory reading, I would like you to jot down on no more than a page or two the points that strike you as especially interesting or unique, along with any thoughts that strike you about conceptual strengths and limitations, possible applications, etc. These reading notes will be turned in--three by July 7 and the other two by July 19--and I'll return them to you. This is to encourage you to have notes on these readings in a form that will be of maximum use to you in the future. I shall give you lists of some readings related to the various sections of the course, but your exploratory readings certainly need not be restricted to those.

Grades in the course will be determined approximately as follows:

Exercises and term report.....	35%
Personal exploratory readings.....	25%
Contributions in class.....	15%
Final exam.....	25%

If there is anything I can do to help you to understand and apply the material, or explore ideas in further details, or provide leads to further references, please don't hesitate to come in to see me or to phone me. My office is in 302 Morgan Hall, my office phone is 974-7231, and my home phone is 693-0147.

David W. Brown  
International Professor of  
Agricultural Economics

Agricultural Economics 4250  
AGRICULTURAL AND RURAL PROGRAM PLANNING

I. Program Planning and Change-Agencies in Perspective

- A. Introduction
- B. Change-agencies as vehicles for agricultural modernization and rural development
- C. What program planning is and does

II. Deciding What to Do and How to Go about It

- D. A framework for operational decision-making
- E. More on goals, constraints, and decision criteria
- F. Some operational methods for evaluating program alternatives
- G. Pinpointing program needs and possibilities
- H. Some decision complications and refinements

III. Putting Plans into Action

- I. Creative organization and administration
- J. Program phasing and blending
- K. Geographical organization of programs
- L. Legitimation, motivation, and leadership
- M. Coordination and communication
- ~~N. Assessing program performance~~
- ~~O. Tying things together~~

# Agricultural and Rural Program Planning

## UNIT A. INTRODUCTION

### THE PROBLEM OF CHANGE-AGENCY CHOICES\*\*\*\*\*

1. The central concern of these notes is improved effectiveness in designing operational programs related to agricultural modernization and rural development-- extension, agricultural research, production credit, soil conservation, marketing schemes, community and regional development, land settlement and reform, and many others in which "grass roots" actions are involved.

2. Common to all these "change-agencies" is the fact that (a) they usually have only limited funds, personnel, and facilities to put to use in working toward program objectives; and (b) there usually is more than one way in which these limited resources can be utilized,

E.g....Mass media vs. local meetings vs. demonstrations in extension...Basic vs. applied research in experiment stations...Responsive vs. needy farmers in allotting credit...Immediate relief measures vs. long-term vocational training in alleviating rural poverty.

3. The basic decision-making problem, then, is: How to allocate limited change-agency resources among alternative possibilities, within the bounds of institutional constraints, so that achievement of program objectives is maximized?

### TWO KINDS OF DECISIONS\*\*\*\*\*

4. To simplify things, it is useful to divide change-agency decisions into two kinds:

- a. Deciding what to do (program content and priorities).
- b. Deciding how to put these components into effect (implementation).

FOCUS ON SYSTEMATIC ANALYSIS, NOT PAT ANSWERS\*\*\*\*\*

5. Program emphases and methods that are best for one change-agent (e.g., a county extension director) may not be best for another. Agency resources may differ in amount and quality; agronomic and human responses to a given action will vary from place to place; social and political attitudes may rule out certain courses of action in some locales; program needs and objectives may differ from place to place and time to time.

6. The units that follow seek to provide useful concepts and techniques to enable change-agency technicians, administrators, and advisors themselves to do a more systematic job of analyzing program possibilities and making decisions...the aim is not to prescribe hard-and-fast answers.

7. In general, effective program design will entail an analytical sequence of the following sort:

- a. Assessing the existing situation relative to desired achievements, and pinpointing obstacles to such change.
- b. Formulating the action possibilities that the agency can consider and assessing the likely outcomes of each alternative in terms of relevant program goals and constraints.
- c. Using appropriate decision-making criteria to arrive at the "optimum" mix and/or sequence of actions.
- d. Developing a plan and organizational structure for putting these decisions into action.

**SEVERAL DISCIPLINES HELPFUL\*\*\*\*\***

8. At the heart of this approach to program planning is the economics of resource use--especially the "opportunity-cost" or "equal-marginal" principle... the notion that effective decisions can be made only by knowing what will be given up from other alternatives when considering any given possibility.

9. But we will be drawing on useful insights from other disciplines as well-- development administration...sociology...education...location theory...systems analysis...sampling...and others.

**OVERALL OBJECTIVES\*\*\*\*\***

10. So hopefully, this study experience will help you in several ways:
- a. To have better understanding of the roles of change-agencies as connecting links between public policies and "grass roots" response in agricultural/rural development.
  - b. To be able to diagnose more systematically obstacles that prevent agencies from being effective in stimulating change and to pinpoint relevant improvements.
  - c. To distinguish between "value judgments" and "technical judgments" when analyzing program possibilities.
  - d. To be able to apply simple concepts from economic and decision theory in dealing with choices and priorities for action programs.
  - e. To be acquainted with some useful aids in program planning and evaluation--benefit-cost analysis...critical pathing...bench mark surveys...pilot projects...use of targets...and others.
  - f. To be acquainted with possible organizational and coordination approaches for implementing programs in creative fashion.

- g. To be sensitive to the importance of human relationships and motivation in effective program design and execution.

## Agricultural and Rural Program Planning

### UNIT B. CHANGE-AGENCIES AS VEHICLES FOR AGRICULTURAL MODERNIZATION AND RURAL DEVELOPMENT

CIRCUMSTANCES MAY BE BEYOND INDIVIDUAL CONTROL\*\*\*\*\*

1. Individuals in society aspire for better things in life--adequate food and housing...good health...more opportunity for their children...money to buy modern-day luxuries...more leisure...security...equity and justice in dealings with others...freedom to do what they want...and many others.

2. But, especially as a society "modernizes" (specialization, greater mobility, breakdown of close family and community "welfare" ties), people may not be able to be productive or to improve their lot without help from others.

3. Low productivity and/or poor living conditions may stem from either:

- a. Constraints and events in the underlying environment--e.g., poor soils, drought, economic depression, obsolescence of skills arising from changing technology, shifts in demand for certain goods and services, land scarcity, weak bargaining position in transactions with others, tenure insecurity, social discrimination, religious or cultural constraints, lack of schools, poor transportation.
- b. Circumstances within the individual family--e.g., death or disability of family wage earners, too many children, reluctance to change occupations or location, lack of technical know-how, failure to take advantage of educational opportunities, lack of capital to improve farming methods or absorb risks, little work capacity resulting from poor nutrition and health, family breakups.

DEVELOPMENT ACTIONS AS AIDS TO INDIVIDUAL CHANGE\*\*\*\*\*

4. So, there may be a need for "external" help or group action (often through government institutions) if changes are to take place or poverty alleviated. This is what agricultural and economic "development" is all about.

5. From the viewpoint of, say, a farmer or low-income rural family, development actions may relate to any of three types of situations:

- a. Type I - You want to improve your productivity or well-being but are not able to do so--low farm prices...infeasibility of building your own dam to control flooding...lack of nonfarm jobs in the region...etc.
- b. Type II - Someone else wants you to do something, but you don't have the capability or incentive--city people want cheaper food, but you don't have funds or technical know-how to increase productivity... society wants you to conserve soils for future generations, but this would be unprofitable for you in the near future...etc.
- c. Type III - You want someone else to do something, but they lack the capability or incentive--tenant farmers in Asia and their weak bargaining positions with landowners...pollution of the stream on your farm by upstream industrial waste...etc.

6. A variety of "instruments" may be used to help stimulate desired change:

- ...Education and technical assistance.
- ...New technology (research).
- ...Subsidies of products, inputs, or services.
- ...Direct public finance and operation of services to achieve scale economies (roads, irrigation, schools).
- ...Taxes to change incentive patterns.

...New laws and regulations, or stricter enforcement of existing laws. to change bargaining positions.

...Insurance to help individuals absorb risks.

...Credit

...Establishment of new rights (e.g., land reform).

7. Efforts to stimulate agricultural and rural change may entail either:

a. Direct government finance and operation (as is often done with roads, schools, flood-control schemes, etc., where there are "economies of scale" from unified organization).

b. Indirect catalyzation of changed private behavior (subsidies to stimulate more production of certain food crops, new rules to protect farmers in the marketplace, tax incentives to induce industry to move into depressed rural areas, etc.).

Another useful way to characterize development actions:

a. Actions to enable change (research to develop new high-yielding varieties, price stabilization measures, irrigation of arid lands).

b. Actions to accelerate response to new opportunities (vocational counseling and employment services, extension to diffuse new technology more rapidly, community development workers to help organize local self-help efforts, regional planning offices).

NECESSARY ELEMENTS TO INDUCE CHANGE\*\*\*\*\*

9. Development efforts often fall short of hopes because they fail to include all the needed elements. A farmer, or businessman, (or bureaucrat for that matter) cannot be expected to change behavior in a way consistent with development objectives unless he:

- a. Is aware that such changes are possible (e.g., some farmers don't even know that fertilizer exists).
- b. Has the capability to make these changes (technical know-how, investment capital, access to markets, etc.).
- c. Is motivated to make these changes (need not only price incentives, but may also have to overcome aversion to risk, negative cultural attitudes, etc.).

CHANGE-AGENCIES TRANSFORM LAWS AND PLANS INTO ACTION\*\*\*\*\*

10. New laws, policies, or plans in themselves achieve nothing. They only set the stage for agricultural modernization or rural development. Their eventual impacts depend on (a) how well implementation or enforcement programs translate these expressed desires into action, and (b) how, in turn, people at whom these actions are directed respond.

11. Such public actions may or may not entail local-level programs and personnel. Actions to control inflation or subsidize schools may involve only national or state offices. Other actions, like agricultural extension, regulation of markets, land settlement, or supervised credit, will necessitate regional and local program outlets. This latter category will receive particular attention in the sections that follow.

## Agricultural and Rural Program Planning

### UNIT C. WHAT PROGRAM PLANNING IS AND DOES

#### "PLANNING" DEFINED\*\*\*\*\*

1. "Planning" is used in many senses--e.g., campus layout...urban land use and zoning...engineering or architectural design...coordination of local, state, or national government activities...establishment of priorities among development programs and projects...design of strategies and sequences for implementing programs...compilation of agency budgets.

2. We will refer to "planning" in the nonengineering or nonarchitectural sense...i.e., forward-looking analysis, selection, implementation, and coordination of programs related to agricultural modernization and rural development.

3. Such planning can range from very informal, disjointed efforts by change-agents, administrators, and advisory groups to very formal, highly coordinated national, sectoral, and regional planning structures with specialized planners.

#### PLANNING VARIES AMONG COUNTRIES\*\*\*\*\*

4. The U.S. has not gone nearly as far as many countries--Eastern Europe, Western European countries, India, Malaysia, Latin America, etc.--in establishing program priorities and government finance and expenditure patterns through formal planning mechanisms. I.e., we do not have in the U.S. a central planning commission or a five-year development plan.

5. But there is a tendency in the U.S. to do more "planning" than in the past through various mechanisms--e.g., the Budget Bureau, new emphases on PPBS, special Presidential advisory commissions, special program reviews by the Federal Extension Service, Federal support of district development districts, state

planning offices, the Council of Economic Advisors.

6. Even where there is "national planning," the degree to which this has direct bearing on final actions varies widely. In some countries (e.g., Russia) planners have authoritative roles...in others (e.g., India) they are a source of guidance which may or may not be followed by line administrators or legislators.. in still others, plans may be only a descriptive summary of what the separate agencies would like to do.

FUNCTIONS SERVED BY PLANNING\*\*\*\*\*

- Planning can help change-agencies in several ways:
  - a. Stimulate design of programs in keeping with defined objectives.
  - b. Establish specific targets to spur greater effort.
  - c. Provide objective measures and documentation for more systematic decision-making.
  - d. Encourage better coordination and phasing of activity.

PLANNING DOESN'T NECESSARILY MEAN "SOCIALISM"\*\*\*\*\*

8. Central, regional, or local planning doesn't necessarily entail more government operation of enterprise, or more controls on production and consumption. All that planning in itself does is try to improve the effectiveness with which public efforts and funds are used to make progress toward socioeconomic goals. Decisions about the extent and acceptable bounds of government action are something quite apart from planning per se. A highly planned economy could at the same time be one where "free enterprise" and "consumer sovereignty" are priority concerns.

PLANNING DOESN'T NECESSARILY MEAN "DICTATORSHIP"\*\*\*\*\*

9. The goals and means incorporated in a development plan may to varying degrees reflect desires of the populace. We may find heavy stress on planning both in "command" economies (e.g., Russia, China, Cuba) and in democratic economies where policies are formed by "partisan mutual adjustment" (e.g., India, Malaysia).

Establishing priorities and stimulating responses consistent with the plan is usually more complex in a democratic economy, but even command economies have problems of sorting out differences within the hierarchy and of motivating action.

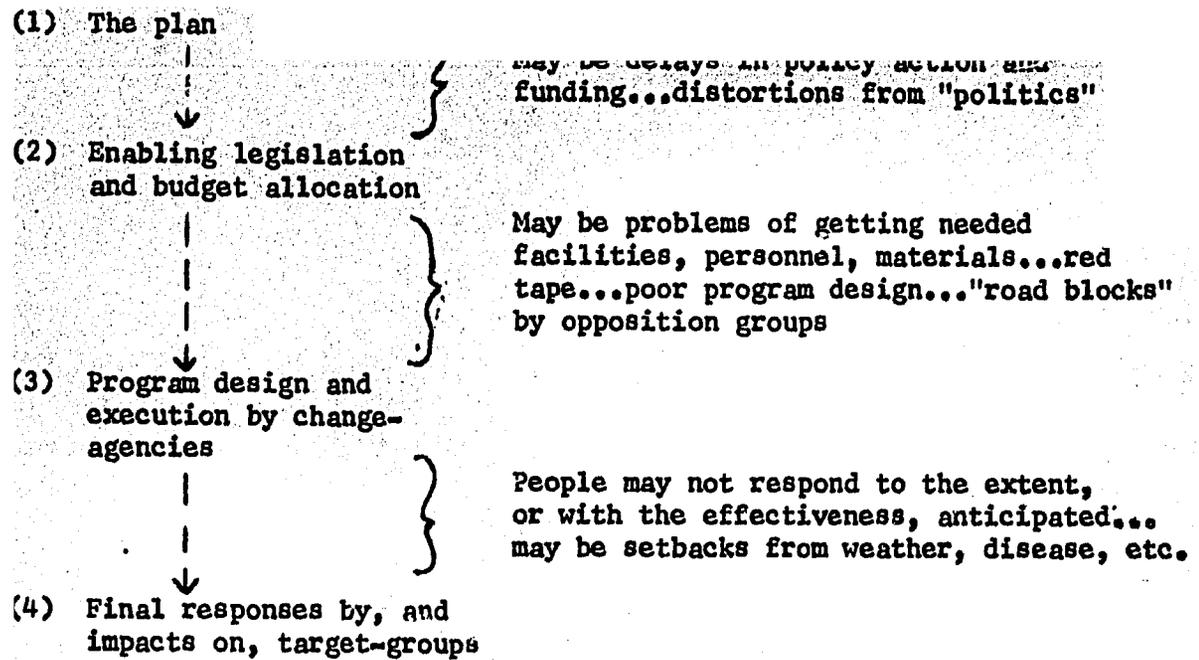
THE PLANS THEMSELVES ARE OF LITTLE USE\*\*\*\*\*

10. In both national and program-level planning there may be excessive preoccupation with the written plan itself--too little attention to how to achieve implementation...how to relate to specific things that legislators, agency heads, and private groups can and cannot do something about.

E.g., a plan calling for doubling of national food grain production will do no good unless careful consideration has been given to the essential conditions for enabling and inducing farmers to make such changes and to the specific "instruments" that can be utilized to achieve such conditions.

SLIPPAGES IN EXECUTION MUST BE RECKONED WITH\*\*\*\*\*

11. Plans tend to be overly optimistic about the results that will be achieved. "Slippages" may occur at several levels:



The units that follow will focus particularly on links (3) and (4).

## UNIT E. MORE ON GOALS, CONSTRAINTS, AND DECISION CRITERIA

## CLARIFYING VAGUE GOALS\*\*\*\*\*

1. Seldom are program goals laid out in clear, consistent manner. Enabling legislation and policy statements often stated in vague, glowing terms--"help all the people"... "improve farmer welfare"... "stimulate rural development"... etc.-- without indication of priorities or constraints implicitly in mind.

2. So goal clarification may become an integral part of the decision-making process, involving a two-way iterative process between policy-makers and implementing agencies in a sequence like the following:

- a. The policy-maker is asked to indicate in more detail what kinds of goals and constraints he really has in mind.
- b. The program planner delineates alternative courses of action that would be relevant, and estimates what the consequences would be in terms of these goals and constraints.
- c. The policy-maker uses this information to jell his thought further about what will be within acceptable bounds.
- d. An action "mix" is selected that meets these specifications.

## TARGET GROUP FELT-NEEDS MAY ALSO BE RELEVANT\*\*\*\*\*

3. For programs aimed primarily at helping certain groups to improve their own well-being (extension, community development, etc.) identifying their own felt-needs also becomes important as a basis for orienting activity.

E.g., policy-makers may assume that higher income is what they want when, in fact, a target-group may be more concerned with security, better schools for their children, or more leisure time.

4. There are several ways for a change-agency to seek out these felt-needs-- informal local contact...special surveys...use of advisory panels...etc.

**SORTING OUT MEANS FROM ENDS\*\*\*\*\***

5. A frequent cause of confusion in program planning is failure to distinguish between means and ends. The tendency is to regard certain means as goals in themselves when, actually, other means could be substituted.

E.g., modernization of farming practices is only one of several possible ways to improve farmers' economic well-being.

6. It helps sometimes to lay things out in the schematic form of a means-ends continuum. (See Figure E. 1)

**THREE DIMENSIONS\*\*\*\*\***

7. In pinpointing goals, three dimensions usually need to be considered:

- a. Whom do you want to help?
- b. What do you want to help them achieve?
- c. When does this achievement need to be fulfilled?

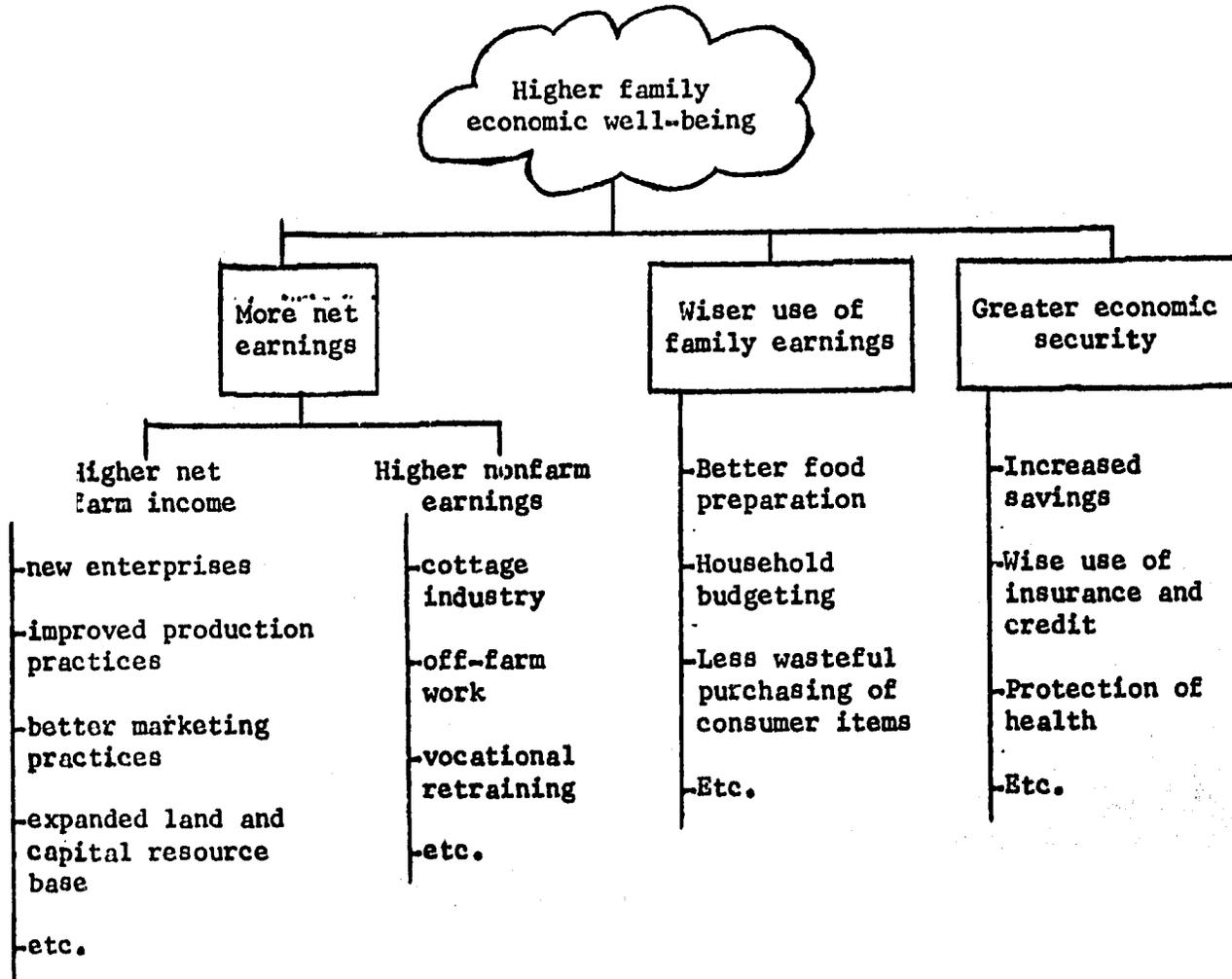
**TRADE-OFFS AMONG COMPETING GOALS\*\*\*\*\***

8. Few programs are attuned simply to one goal. Usually they operate under mandates to work toward several objectives...or at least to avoid certain negative side effects when focusing on a particular kind of accomplishment.

9. It is not possible to maximize everything. Trade-offs are often involved, in which emphasis on one goal entails sacrifice of some other achievement. For example...

FIGURE E.1. EXAMPLE OF A MEANS-ENDS CONTINUUM IN SCHEMATIC FORM

An extension program aimed at helping farm families to improve their economic well-being may address itself to any of several aspects and levels:



- ..Extension focus on improving incomes of disadvantaged farmers may mean less overall gains in agricultural productivity and efficiency.
- ..Conservation of soils for future generations may mean higher-cost food and lower farmer incomes now.
- ..Intensive supervision of credit may help a few farmers a lot, but means many other farmers going without technical help.

10. The opportunity-cost concept still applies in assessing these trade-offs.

Program administrators need to ask:

"As best we can interpret society's desires, will the gains from the proposed action more than offset its negative effects?"

and

"Are there alternative lines of action that would be more consistent with these desires?"

GOALS INVOLVE VALUE JUDGMENTS\*\*\*\*\*

11. Deciding which goal or goals to emphasize in program design involves value judgments--personal preferences about what "ought" to be. No one citizen or official can say objectively on scientific grounds that any one goal is "better" or "worse" than another.

This is what politics, lobbying, and the legislative process is all about-- discovering and blending the preferences of the public, and formulating laws and policies that are consistent with these desires.

In turn, program administrators and planners face the task of translating these public preferences into specific actions and pointing out the likely results in

terms of these expressed desires. It is important for such officials to distinguish between the values that they hold personally and the objectives that have been defined for the programs which they are dealing with.

#### PROGRAM TARGETS

12. Targets are often used in development plans and program implementation-- "adoption of high yielding varieties by 50% of the farmers"... "100,000 acres to be under irrigation by 1975"... "20% increase in average family income in three years"... "100 new demonstration plots in each district"...etc.

These may be very useful as a means of stimulating greater change-agency effort or of measuring accomplishment in tangible terms. But they should not be stressed to the point that true program objectives are obscured or distorted.

Overoccupation with targets can carry several dangers:

...Targets may be imperfect "proxies" for the objectives of true concern.

(E.g., higher yields may or may not be consistent with such ultimate goals as higher farmer living levels or cheaper food.)

...Agency performance may be judged in terms of measures over which that program has little influence. (E.g., community development programs cannot validly be "held responsible" for--or accept credit for--the overall changes in family incomes that take place from year to year.)

...The target may focus on only one of several means to achieve the same desired end. (E.g., there may be other, more effective ways to generate higher food output than by fulfilling a quota of so many extension demonstrations or issuing so many new loans.)

...Stress on numerical targets may result in "padded" reports, spreading of activity in superficial fashion, lack of true feedback about problems encountered, and discouragement of change-agency innovativeness.

## Agricultural and Rural Program Planning

### UNIT F. SOME OPERATIONAL METHODS FOR EVALUATING PROGRAM ALTERNATIVES

#### EVALUATION NOT JUST FOR GRANDIOSE PROPOSALS\*\*\*\*\*

1. Given information about the goals and constraints to be emphasized, present status of target groups, and technical action possibilities, a large part of the task of change-agency planners centers around empirical estimation of the likely future consequences of program proposals as a basis for choosing among them.

2. Such evaluation may be very elaborate--e.g., the benefit-cost analysis commonly used in connection with proposals related to multi-purpose dams, roads, etc....the Planning-Programming-Budgeting exercises recently initiated by the U.S. Government to put proposals of the various agencies on a more comparable basis... the feasibility studies frequently requested by the World Bank, AID, and other assistance agencies when considering loan proposals.

3. But the same basic idea of sizing up trade-offs systematically can be very useful, even if the proposals of concern are very small in scope or if it is not possible to obtain good quantitative estimates of likely results...even doing some rough "guestimating" on the back of an envelope is better than nothing at all.

4. Some examples of practical techniques that can be applied to various decision-making situations follow:

#### SINGLE-GOAL MAXIMIZATION EXAMPLE\*\*\*\*\*

5. Suppose an extension agent is assigned the task of making a special "push" this year to stimulate farmers in his area to increase soybean production next year through adoption of improved soybean production practices. He can devote

one-half man-year and \$1,000 of his budget to this effort. He is trying to decide which of three possible extension approaches to emphasize: (a) farmer meetings, (b) mass media, or (c) test demonstrations on selected farms.

On the basis of previous experience and what is happening in nearby farming areas, the agent guesses that the results of each alternative approach would be something like:

Farmer meetings - could hold 25 meetings...500 farmers would attend, average of 20 at each meeting...20% (100) would decide to adopt improved soybean practices ...if each has 50 acres and the resulting yield increase were 20 bu., this would mean a total production gain of 100,000 bu.

Mass media - could develop 10 newspaper articles, four TV programs, and eight radio broadcasts...would expect that 2,000 local farmers would be reached one or more times...of these, 6% (120) would decide to adopt improved practices...average farmer would have 50 acres but yield gain would average only 10 bu. since mass media not so effective in helping with individual questions...so total production gain would be 60,000 bu.

Test demonstrations - could establish 10 demonstrations with influential farmers in key locations...300 other farmers would attend field days or visit the fields on their own...30% (90) of these decide to adopt...if each has 50 acres and (because of the opportunity to learn by actually seeing) can be expected to have a 30-bu. yield increase, total increase in soybean production would be 135,000 bu.

The extension agent therefore concludes that the test demonstration approach would be best if the goal is to maximize gains in soybean production. (Of course, it could be that some combination of two or all three approaches gives even better results.)

LEAST-COST EXAMPLE\*\*\*\*\*

6. Suppose that two alternative ways to provide a 20-county rural area with good emergency medical care facilities are being considered: (a) five small hospitals in scattered locations or (b) one larger central hospital, with subsidized helicopter service to bring critical cases from outlying places. Annual government operating costs are projected as follows (figures hypothetical):

<u>Alt. (a):</u> Operating and overhead costs of five small hospitals	
hospitals @ \$60,000 each	\$300,000
Stipends and supporting services for three doctors	
in each hospital @ \$30,000 each	<u>450,000</u>
	\$750,000
<u>Alt. (b):</u> Operating and overhead costs of one central hospital	\$150,000
Stipends and supporting services for 10 doctors	
@ \$30,000 each	300,000
Expense of operating a helicopter	<u>50,000</u>
	\$500,000

Quality of services and other things being equal, it would be rational in this case for local governments to get together and establish the central facility.

MULTIPLE GOALS\*\*\*\*\*

7. Suppose that a land reform program is planned to divide large haciendas into small holdings that are owned and operated by the former hired workers. The objective is to help as many workers as possible to have the security of land-ownership, and at the same time give each enough land to be efficient and to earn enough to support their families adequately. The haciendas would be divided in any of several ways, with the following anticipated results:

50,000 Acres of Haciendas Divided into:	Predicted Outcomes		
	No. of Families with Their Own Land	Ave. Net Income of the New Small Holders	Total Agr. Output from the Area
a) 25,000 farms, 2 A. each	25,000	\$ 300	\$20 mil.
b) 10,000 farms, 5 A. each	10,000	\$ 800	\$23 mil.
c) 5,000 farms, 10 A. each	5,000	\$1,200	\$28 mil.

Dividing into many small farms would give most of the families land of their own, but would result in very low average incomes and very limited opportunities for efficiencies of farm size. The other extreme would make some of the families quite well off and significantly increase total output, but would mean many persons continuing to be hired workers. Which of these or other alternatives is "best" is not something that program workers can themselves determine objectively. The decision depends on the relative importance attached to each objective by representatives of the public in the legislative and policy formation process. Technical estimates of the trade-offs involved, as illustrated above, can be very helpful in making such choices, however.

WEIGHTED GOALS\*\*\*\*\*

8. IF (somehow!) a quantitative weighting of public preferences can be ascertained, the decision about what to do in multiple-goal situations becomes more mechanical.

In the above example, suppose that the land reform officials "read" public opinion as placing about twice as much importance to giving people their own land

as to either ensuring high net incomes or increasing total agricultural output. The land redistribution alternative that would be the highest expected social value (weighted % of maximum possible accomplishment) turns out to be a), many small farms:

$$\text{Alt. a): } \frac{25,000}{25,000} (.50) + \frac{300}{1,200} (.25) + \frac{20}{28} (.25) = 74\%$$

$$\text{Alt. b): } \frac{10,000}{25,000} (.50) + \frac{800}{1,200} (.25) + \frac{23}{28} (.25) = 57\%$$

$$\text{Alt. c): } \frac{5,000}{25,000} (.50) + \frac{1,200}{1,200} (.25) + \frac{28}{28} (.25) = 60\%$$

WHEN NO NUMERICAL ESTIMATES AVAILABLE\*\*\*\*\*

9. Many times, quantitative estimates of likely program consequences will not be available, or objectives are of a hard-to-measure, intangible nature.

Even so, some simple techniques can be used to help size up the pros and cons of various proposals in orderly manner, or at least to pinpoint the aspects most critically needing further investigation.

10. If nothing more, program planners can make narrative lists of advantages and disadvantages of each alternative in terms of the objectives and constraints considered to be most relevant.

11. A further refinement is to prepare a plus-and-minus table, in which ordinal comparisons of positive and negative effects are made on the basis of best available judgments.

For example, suppose that an anti-poverty program in Appalachia is seeking to improve rural family income opportunities. There is concern not only with long-

term increases, but also with reaching significant numbers of persons, having some impact in the near future, and helping local business. Relative impacts of some proposals being considered are judged to be as follows:

Course of Action Emphasized	Key Concerns			
	Family Income Gains Next 20 yrs.	Family Income Gains Next 3 yrs.	No. of Persons Helped	Impacts on Local Business
1. More extension help to farmers.	+1	+2	+2	+1
2. Vocational retraining programs for older persons	+2	+2	+1	+2
3. Better schooling for young people	+3	+1	+3	+2
4. Placement service to help people find jobs outside Appalachia	+1	+2	+1	-1

This kind of table does not provide any final answers and no single course of action is clearly advantageous in all respects. But it does provide a basis for a more systematic discussion of the trade-offs involved during the decision-making process.

**BENEFIT-COST ANALYSIS\*\*\*\*\***

12. Change-agencies frequently have before them lists of action or investment proposals which add up to far more than could be undertaken at any one time. Priorities have to be established.

Benefit-cost analysis is a technique for comparing proposals on a standardized basis, by listing the dollar benefits and costs expected to be associated with each,

and summarizing with a single indicator, such as the benefit-cost ratio, or rate of return to investment.

13. It has been used most frequently in connection with proposed construction projects, such as dams and roads. More recently benefit-cost analysis has been applied to other kinds of activities, such as educational and research programs, pollution control, and welfare measures.

14. Discussion and refinements of benefit-cost analysis have centered around such aspects as

...How far to go in including indirect benefits and costs stemming from the project?

...How to handle hard-to-measure, intangible effects?

...What single indicator to use in comparing one proposal with another?

15. One criticism that can be made of benefit-cost analysis in its traditional form is that it focuses on total monetary effects, without systematic attention to other kinds of objectives or to the impact on specific groups of people.

PPB\*\*\*\*\*

16. An approach that the U.S. Government initiated in 1965 to review program and budget proposals more systematically is the Planning-Programming-Budgeting System. Under this each agency, from the top level on down, is requested to present its proposals not only in terms of costs associated with each functional component, but also with estimates of the resulting payoffs in terms of objectives relevant to that agency. This is sort of a benefit-cost approach, but without so much emphasis on money accomplishment alone and with capability to handle multiple objectives.

17. There have been criticisms of PPB--tendencies to favor programs with quick or tangible impacts...problems of comparing goals of different agencies...dangers of "padding" figures to make pet projects look good...etc. But this exercise is resulting in administrators and personnel taking a sharper look at alternative means of achieving more clearly defined objectives.

SYSTEMS ANALYSIS\*\*\*\*\*

18. Taking several program constraints and alternatives into account at the same time can become very confusing. There are some techniques from systems analysis (operations research) that can be helpful.

For example, the situation shown in Table F. 1 lends itself to the use of linear programming, through which the "mix" of projects that maximizes net incomes during the next 10 years within the bounds of stated constraints could be derived.

19. Even if mathematical solution is not feasible, viewing the possibilities in a systematic tableau of this sort can help make comparison of alternatives more orderly.

SIMULATION\*\*\*\*\*

20. To find out in some detail what results and problems will be associated with a new proposal can be very costly and time-consuming if one goes ahead and actually tries it out on a pilot basis.

To reduce the odds of making a big blunder, planners are turning more and more to simulation analysis in which the events that are likely to take place were the proposal to be implemented are traced through on paper in evolutionary fashion.

TABLE F.1. SUMMARY OF PROGRAM POSSIBILITIES AND PREDICTED RESULTS FOR  
AN ILLUSTRATIVE RURAL DEVELOPMENT AGENCY

Objectives and Constraints	Alternative Projects and Input-Output Relationships Per "Project Unit"				
	Supervised Production Credit	Mass Media Extension Information	Stimulation of Cottage Industry	Breeding Program for Improved Livestock	Organization of Marketing Cooperatives
<u>Major objective:</u>					
Maximum gains in rural net incomes during the next 10 years	\$2.5 mil.	\$1.2 mil.	\$1.6 mil.	\$4.0 mil.	\$1.0 mil.
<u>Secondary objectives:</u>					
Increase in rural net incomes of at least \$2,000,000 during the first 3 years	\$500,000	\$400,000	\$300,000	\$60,000	\$120,000
Direct benefits to at least 6,000 families over the 10 years	500	8,000	750	1,000	1,500
<u>Resource constraints of the agency:</u>					
No. of senior technicians ( $\leq 10$ )	1	1	1	1	1
No. of junior technicians ( $\leq 30$ )	3	2	4	3	2
Annual operating budget ( $\leq \$100,000$ )	\$5,000	\$10,000	\$4,000	\$20,000	\$5,000
Annual funds for loans ( $\leq \$500,000$ )	\$75,000	--	\$25,000	--	\$40,000

21. "Simulation" may range in sophistication from simple narrative form all the way to elaborate operations research "models" involving simultaneous equations. For situations where there are many uncertainties about weather, prices, human response, etc., "Monte Carlo" or other methods for projecting what would happen under a random series of circumstances may be employed.

SENSITIVITY ANALYSIS\*\*\*\*\*

22. Another aid to evaluation of program proposals, especially where there is little knowledge about likely results, is sensitivity analysis. Two ways (among others) in which this can be helpful are:

- a. Estimating the amount of impact that the proposal would need to have in order to induce the desired response by farmers or other target groups.

Example--Suppose it is proposed to subsidize the cost of fertilizer in order to stimulate farmers to produce more food crops. Representative farm situations could be budgeted or linear programmed to estimate how much would be produced, and how much fertilizer profitably used, under each of several assumed fertilizer prices. This would provide a guideline as to the amounts of price subsidy and fertilizer supplies needed to induce the desired increase in food production.

- b. Pinpointing of key variables about which more facts are needed if an informed program decision is to be made.

Example--Suppose an extension program is being planned to help low-income farmers improve their earnings through adoption of new crops.

Analysis of representative farmers shows that they have plenty of surplus family labor, but are short on capital. This suggests that, in choosing the particular crops to be promoted, extension planners need to concentrate especially on information about capital needs of the new crops being considered.

UNIT G. PINPOINTING PROGRAM NEEDS AND POSSIBILITIES

SIZING UP ACTION POSSIBILITIES\*\*\*\*\*

1. The methods for evaluating program alternatives that were outlined in the preceding unit all hinge around three prior steps:

- a. Pinpointing the specific problems and target groups to receive attention.
- b. Formulating action proposals for alleviating these needs or stimulating the desired changes.
- c. Predicting what would happen under each proposal, in terms of relevant goals and constraints, as a basis for establishing priorities and choosing among alternatives.

KEY QUESTIONS\*\*\*\*\*

2. To delineate the most appropriate action possibilities, several kinds of questions need to be raised:

- ...In operational terms, who is it that we want to help, and what changes do we want to help bring about? What adverse side effects do we want to avoid or minimize?
- ...Where does the target group stand now relative to these objectives? What obstacles (within the broad categories of knowledge, capability, or motivation) have prevented these persons from achieving this?
- ...What could our agency do--either through modification of existing programs or initiation of new programs--to help enable or accelerate these desired changes?
- ...Are the proposals under consideration really feasible in terms of the resources and capabilities of our agency? Legislative authorization?

Acceptability to key interest groups?

.Are there other action possibilities, or modifications of present proposals, that could achieve more, or be less costly, or have less adverse side effects?

.Can the desired changes be brought about by our agency alone? Or would it be advantageous to mesh with companion efforts by other agencies?

**BENCH MARK INFORMATION\*\*\*\*\***

3. In pinpointing the courses of action to receive special attention, several sources of information can be utilized--informal feedback from people who know the situation...field trips...special surveys...natural resource inventories...results of previous research...in-depth case studies...census and other aggregative data.

4. In such bench mark analysis it is important to keep in mind what you're really trying to learn more about:

...Descriptions of recent trends or present situations?

...Insights about why a problem persists?

...The technical feasibility, economic viability, or social-political acceptability of proposals being considered?

...Information about what others are doing to alleviate the problem?

...Or what?

Frequently, the tendency is to focus on descriptive data alone, when in reality this is only part of what is needed to delineate needs and action possibilities.

**DECISION PROFILES\*\*\*\*\***

5. Usually there are several dimensions to be considered and within each several means to choose from when formulating a program "package."

To keep these dimensions and alternatives in perspective, it is sometimes useful to lay them out in the diagrammatic form of a decision profile. How this might be applied to supervised credit is illustrated in Figure G. 1.

GAUGING PROBABLE RESPONSES\*\*\*\*\*

6. Having formulated and sorted out the action proposals that seem to be most germane, there is usually need to predict the likely outcomes of each as a basis for (a) choosing among them and/or (b) determining the magnitude of effort needed to fulfill the objectives. As economists would put it, program "input-output relationships" need to be estimated.

7. Relevant here is what actually is likely to take place were the proposal to be implemented...not what would ideally occur if everything went well. Allowance should be made for such realities as adverse weather, lags in response by target groups, logistical bottlenecks, administrative inefficiencies, reluctance of program personnel to change their ways, and even outright opposition by special-interest groups.

8. Such projection and refinement of program resource needs and performance can usefully blend together information from several sources:

- ...The informal judgments of program administrators and technicians who have had experience with similar programs.
- ...Reports and evaluation studies of similar programs elsewhere.
- ...Use of lay advisory groups as "sounding boards" for proposals.
- ...Buildup of estimates from component bits and pieces of information through "simulation" or "budgeting" analysis.

FIGURE G. 1. ILLUSTRATIVE DECISION PROFILE FOR A LOCAL SUPERVISED CREDIT UNION

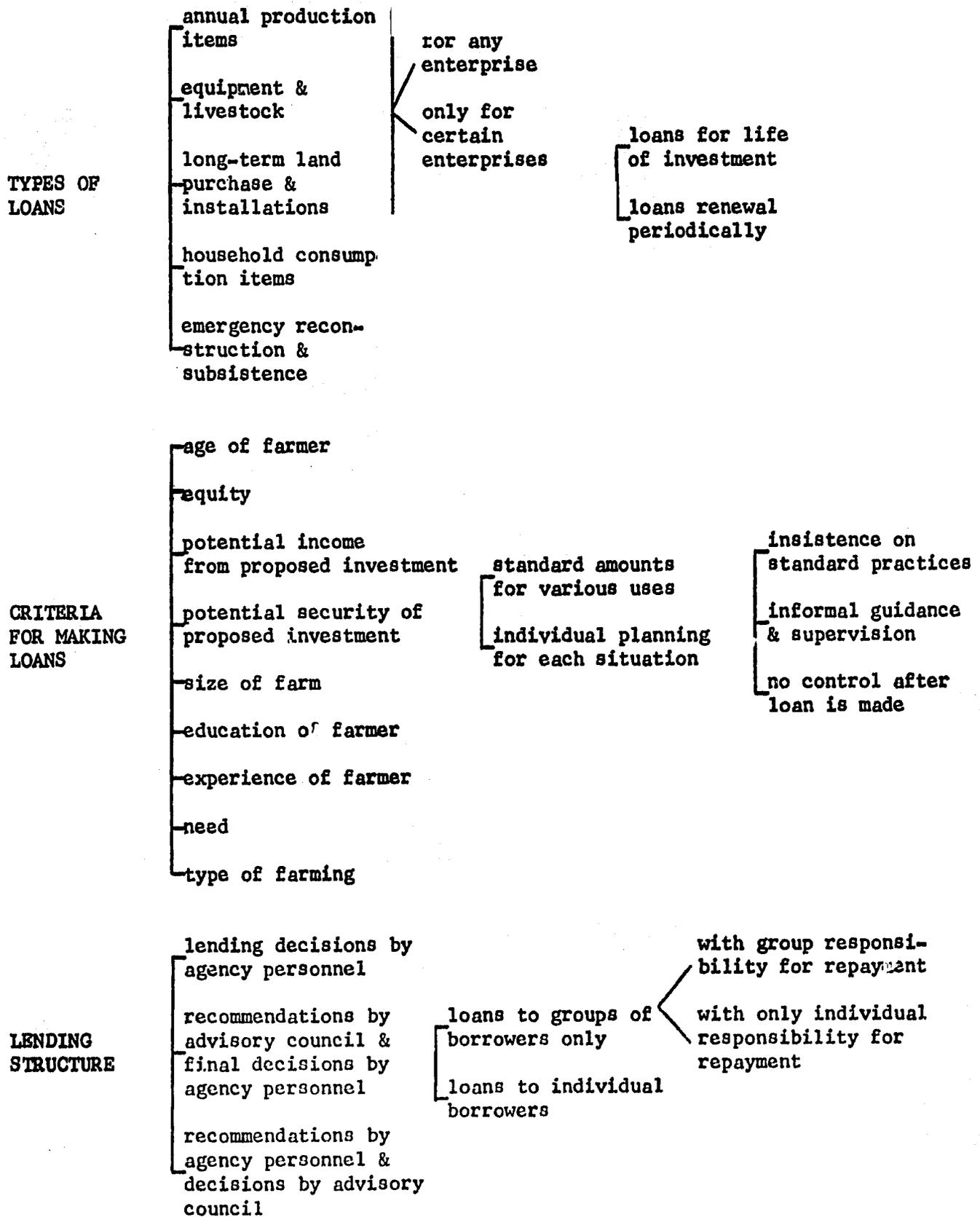
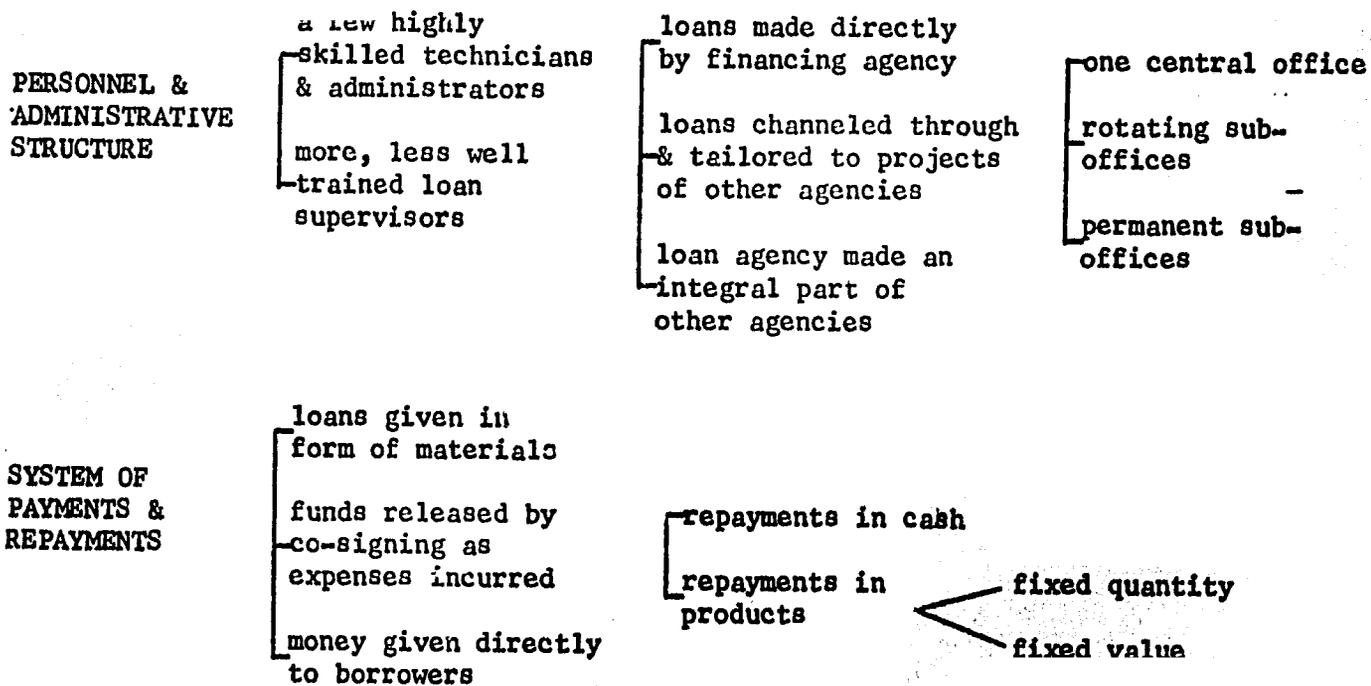
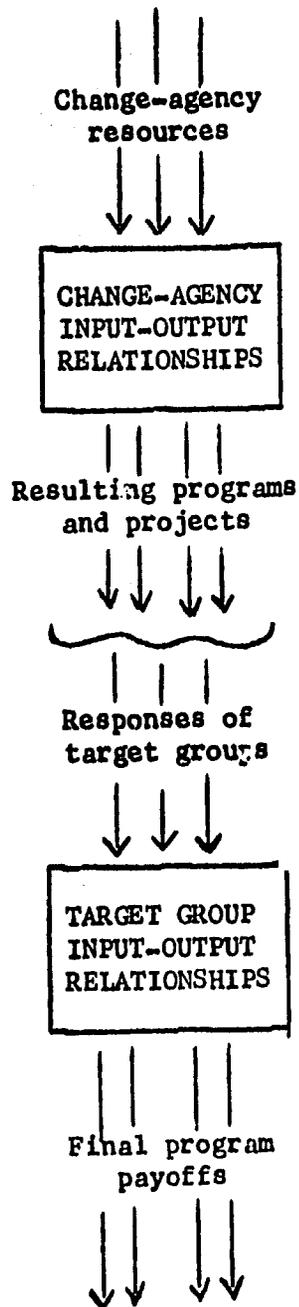


FIGURE G. 1. (cont'd)



SLIPPAGES\*\*\*\*\*

9. In forecasting actual program performance, two kinds of potential "slippages" bear keeping in mind: (a) those associated with the transformation of change-agency resources into programs, and (b) those associated with the response of the target groups (e.g., farmers) to these programs:



ONE-SHOT OR REPEATED NEEDS?\*\*\*\*\*

10. Sometimes brushed over in program formulation is the question of whether a single thrust will do the job, or whether it needs to be repeated or further evolved in subsequent time periods.

Some actions--such as building an irrigation system or land tenure reform--are essentially once-only in character, although subsequent maintenance of these improvements has to be provided for. But other programs may require repetition with the same target group--e.g., the tendency for farmers to revert back to traditional practices unless reminded each year, or the need for credit or market information to be provided on a continuing basis.

PILOT PROJECTS\*\*\*\*\*

11. If there has been no previous experience with a proposed program under similar circumstances, one approach is to try it out on a pilot basis. This can be a way to both (a) learn more about its resource needs and accomplishments and (b) make design improvements in the light of this small-scale experience.

12. Two basic ways to handle pilot projects can be considered, each of which has its pros and cons:

- a. Try out one or more new ideas on an experimental basis with emphasis on sticking to the original plan for each and having a "control group" against which to compare results.
- b. Incorporating new ideas as an integral part of on-going programs in selected places with allowance for modifications and improvements in the original plan while the pilot effort is still underway.

13. In any event, there are some things to be careful about when drawing conclusions from pilot projects--for example:

...Implementation on a mass scale may create problems of a logistical, administrative, or price-effect nature that were not encountered on a small pilot basis.

...Knowledge that they were part of a special pilot effort may have spurred agency personnel, and maybe even target groups, to greater heights of endeavor and response than could normally be expected.

...Special reporting or investigational needs associated with the pilot effort could, on the other hand, impair performance.

...If a large part of the pilot effort is spent "ironing out bugs" and gaining experience, performance later on could in fact turn out to be significantly better.

TARGET GROUPS AND BENEFICIARIES\*\*\*\*\*:\*\*\*\*\*

14. One point to note when formulating program proposals is that the best way to help a group may not necessarily be to work with it directly. Sometimes it is more productive to stimulate another target group to make changes which, in turn, result in more opportunities for the people you really want to assist.

Examples - Inducing agribusiness to provide more services in remote farming areas as a means of helping farmers there to improve productivity...stimulation of industry in Appalachian counties to provide low-income rural people with more job outlets.

RIPPLE EFFECTS\*\*\*\*\*

15. In gauging the likely impacts of some programs, there may be important indirect or multiplier effects that need to be taken into account. That is, the costs or benefits stemming directly from a program may, in turn, generate additional gains or losses. These ripple effects may (a) have additional impacts on the original target group and/or (b) extend outward to other groups or areas.

Example - A new factory in a rural Appalachian county results in more jobs for local people. These people, in turn, start to spend more for consumer goods and services. This may result in not only more opportunities for local business expansion and employment, but may also generate more business and jobs in the regional trade center serving the county.

There are some techniques--such as multiplier, interregional flow, Leontief input-output and shift-share analysis--which can help trace such ripple effects. A frequent question when comparing benefits and costs of project proposals is to what extent to take these indirect impacts into account.

WHEN IS ENOUGH KNOWN?\*\*\*\*\*

16. Bench mark studies, experimental projects, and other means of investigating program possibilities hopefully have the result of improving the effectiveness of the course of action finally selected and/or of reducing the odds of making a bad mistake. But this inquiry also has a cost in terms of (a) diverting agency resources from other activities and (b) delaying the start of the full-scale program.

So, a decision has to be made about the very process of making a decision! Beyond what point will the added gains from analyzing the possibilities further no

longer offset what is given up by not going ahead with the program on the basis of what is already known?

ANALYTICAL STEPS INTERTWINED\*\*\*\*\*

17. The preceding has, for diagnostic purposes, laid out program decision-making as a series of distinct steps--identification of key problems and target groups...delineation of remedial action possibilities...estimation of likely consequences in terms of relevant goals and constraints...use of appropriate criteria to choose among the possibilities.

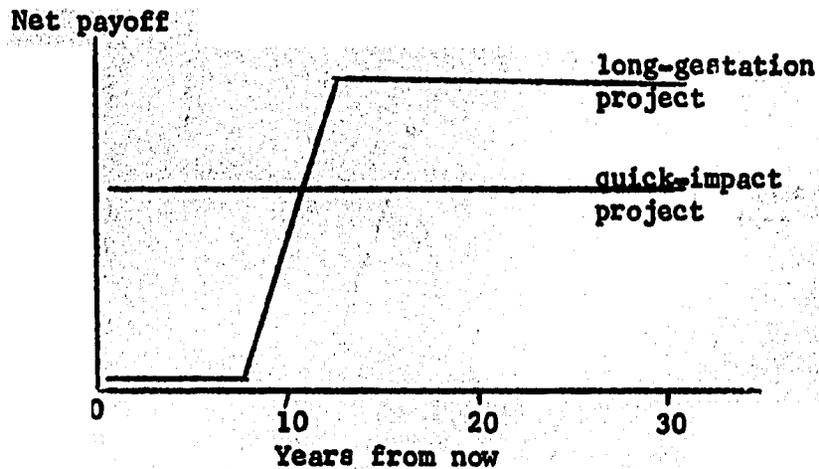
In practice, this may usefully become an iterative process, rather than a hard-and-fast sequence. Discussion of the side effects of action proposals may bring to light additional goals or constraints not initially considered. Review of preliminary alternatives may suggest new action possibilities that incorporate the best features of the others. Officials, upon seeing how costly or complicated it is to achieve all they wanted to do, may decide that some objectives aren't so important after all. And so on.

## UNIT H. SOME DECISION-MAKING COMPLICATIONS AND REFINEMENTS

1. In evaluating program alternatives, sometimes there are some complications that call for further refinements in analytical approach. This unit will deal with three of them--making choices when (1) some alternatives have extended "gestation" periods, (2) there is uncertainty about likely program payoffs, and (3) there is active opposition to program success. The purpose here is not to explain all the ins and outs of possible methods for handling these complications. Instead, it is to give the practicing decision-maker an overall feel of what is involved so that he can at least think more systematically about such complexities and have some understanding of technical analyses related to them.

## COMPARING ALTERNATIVES WHEN EXTENDED GESTATION PERIODS ARE INVOLVED\*\*\*\*\*

2. Some kinds of programs take years before their results are felt--e.g., land clearing and settlement...irrigation schemes...development and testing of new varieties...4-H Club work. How to compare such long-gestation alternatives with one another or with quick-impact possibilities? Simply adding up the "cash" benefit forthcoming each year is usually not meaningful, since most people would prefer to have a dollar now than a dollar 10 years from now; if they had the dollar now, they could either start enjoying the use of that dollar right away, or reinvest that dollar to generate more income in years to come. Or, even if a program isn't primarily concerned with improving family incomes (e.g., improved rural health facilities), a delayed-result proposal would need to have significantly "better" results in order to be preferred to a proposal that helps people very soon.



3. Here we often (but not always) run into a trade-off situation where the delayed-impact alternative has the greater long-run total payoff, but where the other alternative starts "producing" much sooner. The choice will depend on three elements:

- a. The time span (planning horizon) over which program payoffs are to be maximized.
- b. The payoffs of the viable alternatives during this span.
- c. The degree to which people prefer a given payoff now over a year from now, two years from now, etc.

4. If a program is concerned with increasing income or production, one needs to take into account not only the gains resulting directly from the program each year, but also the indirect gains that these in turn generate during the remainder of the planning horizon.

Example--Suppose agricultural extension program is considering emphasis on work with farm youth vs. concentration on adult farmers. The main aim is to increase net farm incomes as much as possible during the next 10 years. The direct gains stemming from the same program resources in each alternative are estimated to be as shown at the left-hand side of Table H.1.

On the surface, it appears that the youth work would have a higher payoff. But this fails to take into account the fact that farmers can save or reinvest the higher income earned in the earlier years and generate still more income during the remainder of the 10 years. The relevant comparison is total cumulative income generated by the program as viewed at the end of the 10-year period.

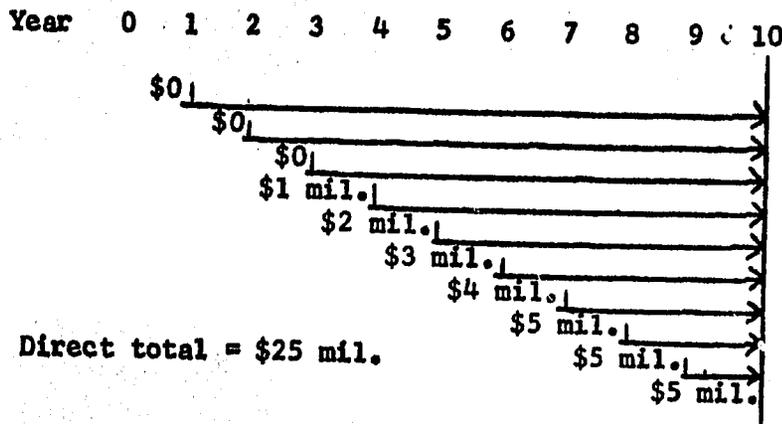
5. If the rate of return on such reinvestment is about the same from year to year, one can use compound interest tables to trace this cumulative effect. At a rate of return of 10%, \$1 reinvested at the end of the first year would be worth \$2.36 by the end of the 10-year period (nine years later), so the \$2 million generated by the adult work would really amount to \$4.7 million at the end of the tenth year. A dollar reinvested at the end of the second year would be worth \$2.14 at the end of the 10 years, so \$2 million would be worth \$4.3 million. And so on. The same compounding process would be done for the youth-work impacts.

We see then that the adult work comes out to be relatively more favorable than it first appeared, since the income gains from the youth work are bunched up toward the end of the time span and, hence, have less time to regenerate additional farm income.

6. Even if the compounded gains of the adult alternative had not been as great as those of the youth alternative, it still may have been rational for the extension

TABLE H.1. COMPARISON OF YOUTH VS. ADULT WORK PAYOFFS FOR ILLUSTRATIVE EXTENSION PROGRAM

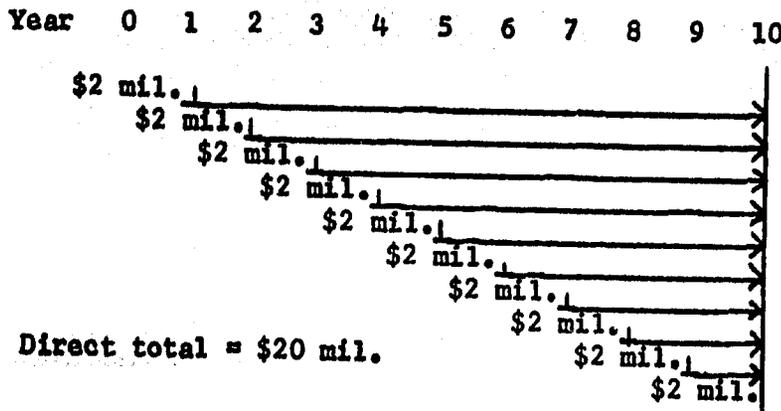
Youth Work:



Income generated by end of 10 yrs.<sup>a</sup>

\$ 0.0 mil.
0.0
0.0
1.8
3.2
4.4
5.3
6.0
5.5
5.0
<u>\$31.2</u>

Adult Work:



\$ 4.7 mil.
4.3
3.9
3.5
3.2
2.9
2.7
2.4
2.2
2.0
<u>\$31.8</u>

<sup>a</sup>/Direct income compounded at 10% over the remainder of the 10-year period.

administrators to concentrate on adult work. They might be under pressure to show some quick results even though this meant a sacrifice of total accomplishment over the 10-year planning horizon.

7. In connection with benefit-cost analysis and related project-evaluation methods, there is frequent reference to discounting. This is the same idea as compounding, except comparisons are viewed from the beginning of the planning horizon rather than from the end. I.e., it says in essence, "How much would you have to have now in order to be equivalent to X dollars a year from now, two years from now, etc. Conclusions drawn from both discounting and compounding will be the same."

8. Even if the program concern is not with income gains, discounting or compounding can be a useful device for viewing proposals in comparable terms. You would be saying in essence, "If the program impacts were delayed a year, we feel we would need 12% (or whatever is the case) greater payoff in order to be equivalent to having results right away." A high interest rate would be used where there is strong preference for quick impacts, and a lower rate where desire for early results is not so great.

#### COMPARING ALTERNATIVES WHEN RESULTS ARE UNCERTAIN\*\*\*\*\*

9. Sometimes it is very hard to come up with a concrete estimate of likely program payoffs. There may have been little or no prior experience with that particular kind of program, target group, or locale. Uncertainties about weather, prices, or other possible contingencies may make the picture very fuzzy. Existence of two or more "slippage points" between the program and final impact on target groups (e.g., agricultural research) may further confound the prediction problem.

10. Where probabilities of outcome are known, or can be estimated within reason, one can compare alternatives using an expected value approach.

Example--Suppose that a research station in South India is trying to decide whether to concentrate (a) on fertilizer trials with traditional food grain crops or (b) on developing a new variety of soybeans adapted to this region. The aim is to maximize farmer income gains over the next few years. It's pretty sure that the fertilizer trials would result in some gains to the farmers but that these would be relatively modest, whereas the soybean breeding work has some, but relatively low, probability of resulting in a major breakthrough.

The "expected payoffs" are estimated as follows:

<u>Farm income gains</u>	<u>Probability of such gains from</u>	
	<u>Fertilizer trials with traditional crops</u>	<u>Soybean breeding work</u>
Rs. 20 mil.	0.0	0.3
10 mil.	0.8	0.3
0	0.2	0.4

Expected payoff, fertilizer trials...

$$20 \text{ mil.}(0.0) + 10 \text{ mil.}(0.8) + 0 \text{ mil.}(0.2) = \text{Rs. } 8.0 \text{ mil.}$$

Expected payoff, breeding work...

$$20 \text{ mil.}(0.3) + 10 \text{ mil.}(0.3) + 0 \text{ mil.}(0.4) = \text{Rs. } 9.0 \text{ mil.}$$

11. The expected impact would be somewhat greater from the soybean variety work. Even so, the research station might rationally decide not to follow this route, as it may be regarded as too risky; the preference may be for a surer bet (the fertilizer trials) even though the "expected" payoff is less. It is still useful to do an analysis of this sort to provide a basis for sizing up this payoff level/risk trade-off.

12. The above example has oversimplified decision-making under risk situations.

Two frequent realities further complicate the situation:

- a. The probabilities of possible outcomes may be vague. (Such fuzziness can range all the way to the "complete-ignorance" or "uncertainty" extreme where no probabilities at all can be attached.)
- b. A "decision path" is involved, where the ultimate payoff depends on chain of interconnected events. (For instance, in the above soybean breeding example, final probabilities of farmer income gains depend not only on odds of the researchers coming up with a better variety, but also on the likelihoods--in turn--of effective extension promotion, of farmer acceptance, and of favorable growing conditions.)

13. Where the probabilities of program outcomes are not known with reliability, the decision-maker can follow two courses: he can either (a) make a choice and go ahead with that action on the basis of the shaky information or subjective guesses that he already has, or (b) he can try to obtain more information through further analysis or pilot projects before making a firm commitment. Once again a trade-off is involved; getting more facts may result in a better decision, but it has a cost in terms of delaying action and diverting agency resources from other endeavors.

14. Increased attention is being given to systematic analysis of choices under imperfect knowledge situations--decision theory, Markov chain analysis, Monte Carlo and other simulation methods, etc. And some development agencies such as AID and the World Bank are starting to use such risk analyses in evaluating agricultural project proposals. The results of such analyses still do not automatically tell what is "best" for an agency to do. They primarily have to do with providing more complete information about payoffs and their likelihoods; there is

still the subjective element of deciding how much risk to be willing to take in hopes of improving program performance.

15. If the risk associated with the highest-payoff alternative seems too great, program officials can consider any of three basic substitute strategies, all of which may result in some sacrifice of expected performance:

- a. Go ahead with a more certain line of action, even though it offers less spectacular possibilities.
- b. Diversify - undertake a combination of two or more actions which, though individually may be high-risk, collectively may reduce the odds of "everything going wrong."
- c. Maintain flexibility - instead of committing the agency irreversibly to a risky endeavor, "keep your options open" by starting out on a small-scale trial basis and leaving room to backtrack or modify design in the light of new experience.

**MAKING CHOICES WHEN THERE IS ACTIVE OPPOSITION TO A PROGRAM\*\*\*\*\***

16. Suppose that you are director of a new anti-poverty program in Hardnose County. Local political leaders are opposed to the whole idea of government intervention and seem ready to "do you in." You are considering three basic lines of initial action:

- a. Sitting in your office and doing nothing.
- b. Initiating several (hopefully) noncontroversial projects--dressing up the shopping areas to attract more retail trade...helping unemployed persons to find jobs...advertising historical sites of interest to tourists...etc.

- c. Shaking up the existing school board structure, and trying to institute an updated vocational education program.

You figure that the present leaders can do either of two things--(a) mount strong enough opposition to impair your results, or even run you and the program out of the county, or (b) maintain a passive attitude--depending on what you do. You believe the outcomes would be as shown in the game matrix of Table H.2.

It comes out that, if you are to make the most of the worst that the local leaders could do to your program, you would restrict yourself to Strategy 2--the noncontroversial projects--and the leaders would reduce the payoff to \$20,000 by still opposing everything you do. Either of the other two strategies--doing nothing, or attempting a major school system shake-up--would in this case result in your program having no impact.

17. This is an illustration of the kind of problem that sometimes confronts change-agencies, whereby the accomplishments of one group are affected by the reactions of other groups, and vice versa. Some other examples of situations that may call for a game-strategy approach are:

- ...Harvest workers vs. food growers vs. the government in establishing labor regulations and bargaining rights.
- ...One action agency vs. another in competing for additional funds or scope of authority.
- ...Landowners vs. landless farmers in influencing land reform program provisions.
- ...Farmer organizations vs. consumer-interest groups in establishing pesticide-use regulations.

TABLE H.2. SIMPLE EXAMPLE OF GAME PROBLEM

- Anti-poverty Program vs. Local Leaders -

	Local leaders could:		Worst that could happen to the program
	Continue opposition	Be passive	
	- income gains to local people -		
<b>Program director could:</b>			
1. Do nothing	0	0	0
2. Start "noncontroversial" projects	20,000	50,000	20,000*
3. Make big push to change school board and improve vocational education	0	100,000	0
<b>Worst that could happen to local leaders</b>	<b>20,000**</b>	<b>100,000</b>	

\*Your "max-min" strategy.

\*\*Local leaders' "min-max" strategy.

- ...Business interests vs. conservationist groups in rural land-use zoning.
- ...Traders vs. a government regulatory agency in administering market price controls with very limited manpower.
- ...Government community development programs vs. revolutionary forces in alleviating rural unrest.

18. The above anti-poverty program is an example of a "two-person" game in which there is a "saddlepoint"--i.e., there is a single action for each side that will make it come out better than any other, given the circumstances. Other situations may be vastly more complicated, requiring highly mathematical game theory techniques for systematic solution. For some situations, "mixed strategies" are best in which each party may employ two or more lines of action in unpredictable order, and game theory can help to determine what to do how often. Further complexities are created when more than two conflicting parties are involved. Less conservative criteria than the "min-max" solution can be used for situations where the group is willing to take more risk of poor results or where it can be assumed that the opponent will not be maximizing his potential to obstruct things.

19. Game theory is still being refined, and attempts to apply this to complex situations have not always been successful. But even though he can't approach such programs mathematically, the practicing program official or worker may find this of help in organizing his thinking about ways to offset conflicting behavior of other groups.

## UNIT I. CREATIVE ORGANIZATION AND ADMINISTRATION

1. Up to this point we have dealt with the possible roles of change-agencies in helping farmers and rural people and with the making of decisions about what to do. But the best laid program plans in the world can go astray if the implementation of these plans is not effectively thought through and handled and unless there is real commitment on the part of administrators and workers to bring things to meaningful fruition. And, what's more, relative complexities (slippages) of implementing alternative program proposals can have much to do with the choice of what to do in the first place.

2. This and subsequent units will not deal with all the facets of effective program management, coordination, and structuring. One can refer to books on public administration for useful ideas and concepts, and recently there have been writings in a field called "development administration" which are pointed especially at problems associated with less orderly or mature institutional settings. The attempt here will be to highlight some aspects that seem to be sources of difficulty when putting agricultural and rural transformation programs into action.

## FUNCTIONS SERVED BY PROGRAM ORGANIZATIONAL SYSTEMS\*\*\*\*\*

3. First, let's view in perspective the kinds of roles that an agency, program, or project organizational system needs to serve. Saul Katz<sup>1</sup> has suggested a helpful classification into four components:

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<sup>1</sup>See Saul M. Katz, Administrative capability and agricultural development: an institutional-building approach to evaluation. Am. Jour. of Agr. Econ., 52(5): 794-802. December 1970.

- a. Transformation - the effective conversion of program resources and plans into program "outputs" that in turn lead to the desired accomplishments for the target groups...the technical business of "squeezing the juice out" of the program's capability to "produce," so to speak.
- b. Maintenance - setting the structural and procedural stage for enabling the program to survive and operate in orderly, stable manner--financial procurement and control; personnel recruitment, training, and management; logistics of supplies and facilities; smooth relations with sources of support, companion agencies, clientele groups, and others; documentation of decisions and actions; etc.
- c. Adaptation - keeping in touch with the continual changes in the external environment (clientele needs and wants, new technical opportunities, attitudes toward the program, etc.) and expediting timely, innovative response in program content and methods to these changes. Program planning and evaluation--and more importantly, a creative attitude--are at the heart of this function.
- d. Guidance - direction and coordination of all the organization's activities so as to blend the above three components together as successfully as possible. Good internal communication and resolution of conflict is an important part of this.

**TRADE-OFFS AMONG ORGANIZATIONAL FUNCTIONS\*\*\*\*\***

4. Domination by persons in a program or agency who are concerned with a particular one of these organizational functions can be to the detriment of others. Some examples of such trade-offs are:

...The extension specialist who, in his preoccupation with having an assured "output," is reluctant to depart from tried-and-true extension techniques, subject matter, or clientele in order to try out some new approaches in response to changing needs and conditions (transformation/adaptation trade-off).

...The program fiscal officer who becomes so concerned with financial control and documentation that a technical worker who needs to make a new kind of purchase in a hurry is told "it can't be done" (transformation/adaptation/maintenance trade-off).

The community development worker who becomes identified with a local political group as a means of getting support for a particular project he wants to promote this year (adaptation/maintenance trade-off).

...The department head who discourages a young professor from developing a research project because it encroaches on the subject matter of another professor and might make him upset (guidance/adaptation/transformation trade-off).

...The administrator who prepares detailed guidelines for his field staff so that they won't "step out of line" or depart from established priorities (guidance/adaptation trade-off).

...The county agent who spends most of his time responding to varied-requests for special help rather than developing a cohesive educational program (adaptation/transformation trade-off).

...The extension administrator who steers his agents away from helping farm tenants because this may antagonize the landowner organizations which have traditionally supported the agency's budget proposals (adaptation/maintenance trade-off).

5. In short, capacity and readiness to innovate or to change program direction as needed can be seriously hampered by preoccupation with routine housekeeping, fear of taking risks, excessive coordination, lack of resource-use flexibility, and things of that sort. On the other hand, extreme readiness to let program workers charge into new endeavors all the time--as exciting as their new ideas may be--can result in longer-term repercussions, such as failure to follow through, neglect of routine

responsibilities, lack of consistent direction, lost motion in continual reassessment and regearing, and erosion of clientele support. But in between these extremes there can be an organizational environment in which the transformation, maintenance, adaptation, and guidance functions are complementary to one another--where productivity, creativity, and responsiveness to change are encouraged...and where coordination and procedures are viewed as means of enhancing functional performance rather than as risk-preventing roadblocks...yet where there are appropriate checks and balances to dampen the likelihood of ill-conceived ventures or inconsistent direction.

DANGERS OF SUBMERGING CENTRAL PURPOSE\*\*\*\*\*

6. In his preoccupation with personal aspirations, and a particular functional or organizational aspect of a program, it is easy for an administrator or worker to lose sight of the program's basic reasons for existing. Immediate activities or procedures may become ends in themselves, and personal motivations may be inconsistent with maximum contribution to program success.

For example, a researcher, in his preoccupation with tangible "output" and status among professional peers, may concentrate on producing journal articles and methodological sophistication, rather than focusing on the kinds of research most useful for solving major problems and striving to communicate with the groups who can use his findings. And this may be reinforced by the supervisor who stresses publications and professional reputation as measures of good research performance.

We find similar examples of distortion of program purpose in the production credit officer who sees maximum number of new loans or minimum repayment losses as his prime objective...in the community development worker who gets all wrapped up in organizing meetings and "involving" people even though this may not be leading to anything particularly useful to the locality...in the ambitious technician who

doesn't want to collaborate with others for fear of not getting credit for his work ...in the program accountant who becomes more concerned that every regulation be followed."to the letter," than devising ways to help expedite program needs...in the administrator who becomes primarily concerned with program expansion and protection of his position for their own sakes.

7. It doesn't do much good simply to lament these propensities, for these are human traits that will always exist. But the alert program leader can have an instrumental effect in utilizing the individual drives of his staff as a positive force rather than trying to "battle" them. He can do things like keeping the broad aims of program continually in the forefront and letting it be known that staff performance will be judged in terms of contributions to this rather than necessarily in terms of some more immediate activity. He can take a "behavioralist" approach in organization--i.e., building activities and responsibilities as much as possible around the unique capabilities, interests, and communicative linkages of individual staff, instead of attempting to remold everyone into hard-and-fast roles or structures. He can encourage a spirit of individual responsibility and initiative, and stand ready to buffer them should there be negative repercussions from well intended innovative efforts. He can instill a spirit of concern for success of the program as a whole by keeping staff informed about the broad picture, involving them in decisions, and encouraging candid reactions in discussing problems and future directions.

#### SPECIAL PROBLEMS OF OLDER PROGRAMS\*\*\*\*\*

8. Problems of losing sight of original objectives and maintaining balance among the four organizational functions often become especially acute in long-established programs. Self-perpetration and protection of "territory" may be

dominant concerns, although changing times call for redirection, or even phasing down, of the work. Precedence and close ties with traditional clientele groups may exert severe dampening effects on proposals for new program content or approaches. A large share of the effort may be devoted just to maintain the organization--report writing, internal housekeeping, public relations, etc. There may be so much preoccupation with "busy work" that there is little slack for new program thrusts. Many of the positions may be filled with persons who are "battle-weary" and drained of new ideas and who are reluctant to do anything to jeopardize their comfortable status.

9. These ~~same~~ programs have some unique attributes too, such as experience and the reputation of previous usefulness to help buffer occasional mistakes. But for the energetic, innovative person who comes to work with such an agency it can be a very frustrating experience. The same can be true for higher-ups or interest groups outside the agency who would like to revitalize or reorient its work. But all is not necessarily lost. Whereas package proposals for major changes or new ventures are likely to be resisted by leaders or workers in an "aging" program, the innovator can often have success by working toward such shifts in small, less obtrusive bits and pieces. The "outside" influential can do some things too. Ear-marking the use of additional funds and personnel is one (although this can create some rigidities that are hard to eliminate later on). Requiring the agency to rejustify its programs "from scratch" (as is being done to some extent in connection with PPBS), rather than letting it assume that funding will be automatic every year, is another. Threatening to let another agency run a new program that would be more logical for the "sleepy" agency to handle is still another.

**SOME KEY QUESTIONS IN ORGANIZING A NEW PROGRAM\*\*\*\*\***

10. Now in a more positive vein, some key questions to be raised and alternatives to be considered in launching a new program frequently include the following:

- ...Which agency or sub-unit should handle the program? Can an existing organization do the job well, or would it be better to create a new one specifically for this purpose? If the program scope is broader than that of any existing agency, how can it best be structured--create a special new "umbrella" unit with line authority over contributing agencies?...Rely on an informal coordinating council of representatives from each participating agency?...Have one agency spearhead the activity with provision to draw on the help of other agencies as need-be?...Let one existing or new agency handle the whole business, even though it may result in duplication of functions?...Or what?
- ...Should the work be organized on an enduring basis, or is it more a matter of mobilizing a temporary, one-shot effort? If a continuing program, will the major emphases be fairly stable, or is there need to build in flexibility to allow transition from one major phase to another?
- ...In what sequence and how fast should the program be implemented? Should all activities be embarked upon everywhere at once, or would it be better to concentrate first on a single program component or a single geographic area?
- ...Should this effort be played up as an innovative new thrust, or would it be more expedient to use an "oozy" approach in which the new changes are implemented gradually with minimal fanfare?

- ...What constraints in organizational resources and capabilities are likely to be most binding as the program starts out--facilities...qualified personnel...logistical support...or what? How can these most effectively be alleviated?
- ...Is there existing felt-need and public support for the new program? Or will special attention have to be given to generating interest and acceptance? Are there misleading rumors or active opposition to be reckoned with?
- ...Is this the kind of program that lends itself to a loosely controlled approach, with flexibility for individual personnel to make judgments and take initiatives on their own? Or is there need for tight top-down decisions and procedures?
- ...What degree of centralization of functions and facilities would be best? Would there be significant "economies of scale" by having personnel clustered in a few large headquarters? Or would this be more than offset by gains from having activities tied more closely to local areas?
- ...To what extent should the agency handle the various activities itself, as opposed to contracting out certain functions or seeking volunteer help?

**REVAMPING AN ON-GOING PROGRAM\*\*\*\*\***

11. Of course, it's exciting to be involved in designing and implementing a brand new program "from scratch." But not too often does a program administrator or technician walk into a situation where he can start with a clean slate. He is more

likely to inherit previous commitments, a lot of "can'ts" and "don'ts," and maybe even negative attitudes stemming from predecessor actions.

12. So, what can the person who is given responsibility for moving a program forward in such a setting do? What kinds of questions does he need to ask in assessing the situation and determining how best to start out? A line of appraisal something like the following can be helpful:

- ...What is it that my supervisors and/or clientele are looking for me to do? Is it pretty much to continue the status quo? Or is it to introduce new elements in program content, procedures, or overall vitality? What are my own ideas about what should be done, and to what extent are these consistent with others' expectations?
- ...What decisions and actions will I have particular influence over? Whose decisions and attitudes will have strong bearing on what I can do? Do others in or outside the program regard me or my role as a threat to their influence or status? If so, what could I do to avert this and even to gain their help as a positive force toward program success?
- ...If some major innovations seem called for, how best can I go about introducing them? Are there some success elements from previous efforts--such as clientele rapport--that I can build my efforts onto? Are there some existing attitudes or conflicts that I particularly should avoid becoming identified with? Would it be well to frame my proposals as only modest departures from what has been done before ("...nothing particularly new, except...") or would it be better for my ideas to take on the appearance of a bright, fresh start? Should I present my ideas

as one big "package," or had I better move in small steps? How much in the way of change will "the market" bear at any one time?

Sensitivity to these kinds of issues can be just as important as technical competency in achieving new program successes in an on-going agency.

## UNIT J. PREVENTION AND ALLEVIATION OF PROGRAM BOTTLENECKS

## PLANNING IMPLEMENTATION STEPS TO AVOID DELAYS\*\*\*\*\*

1. Given the decision to go ahead with a particular program or project, there still remains the problem of ascertaining the specific steps and sequences for carrying it out. What needs to be completed before you can move onto the next stage? Are there some things that can be started without waiting for other phases to be finished? How much time will be needed to carry the key steps to completion? If there is a particular phase which appears likely to delay everything else, could this bottleneck be eliminated by shifting more resources to it or by modifying some details? If administrators have given you a certain deadline for project completion, can you hope to meet this on schedule with the resources that you have? Or will you have to ask for either a time extension or more help?

2. To shed light on these kinds of questions, it can be very useful to prepare a network diagram that displays the steps involved and how they would be interlinked sequentially. A simplified example of how this could be applied to the execution of a local fertilizer-response trial is shown in Figure J.1. Note that there are two key elements in such a diagram:

- (1) Events - steps accomplished, as shown in the boxes.
- (2) Activities - the time-consuming processes entailed in moving forward from one stage to another, as denoted by the lines with arrows.

Note also that some segments are serial in that they must follow one another, whereas others are parallel and can be done simultaneously with others. This kind of diagram is a way to check in advance that you haven't forgotten an important step. It also helps to keep in perspective where you are as the work gets underway and to anticipate subsequent steps needing special attention.

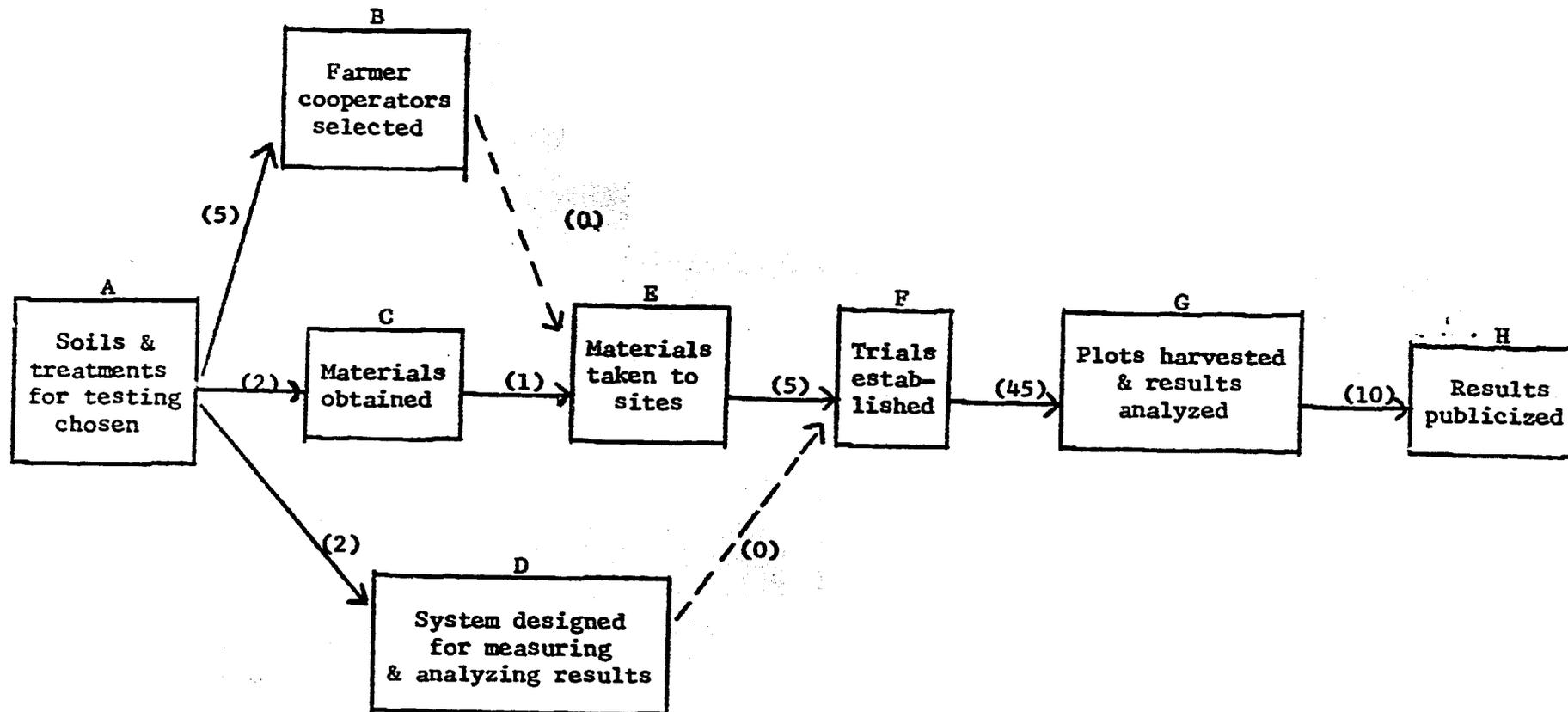


FIGURE J.1. ILLUSTRATIVE NETWORK CHART SHOWING EVENTS AND ACTIVITY TIMES (DAYS) FOR CONDUCTING FERTILIZED TRIALS

3. A further refinement would be to estimate the amount of time needed to carry out each activity, as shown in parentheses in the example. From this you can determine when the project probably will be completed, or--as is more appropriate in the fertilizer-trial example--how much lead-time is needed in order to have things ready on time.

Also, the estimated times provide a basis for pinpointing the subset of activities and events that is especially binding--called the critical path--in terms of preventing the project from being completed sooner or started later. In the fertilizer-trial illustration, the critical path is that which connects Events A-B-E-F-G-H, requiring a total of 65 days. Any activity along that path which could be made quicker would have the effect of reducing total project time; speeding up activities not on the critical path would have no effect on total project duration.

4. In practice, the steps involved in carrying a program to completion are frequently more complex. The time required for each activity may not be known for certain. Cost considerations may be important when deciding how to shift efforts from one activity to another in order to reduce delays from bottlenecks. Using the basic approach described above as a point of departure, systems analysts have refined some methods involving computers for handling such complications. These methods--PERT (Program Evaluation and Review Technique), CPM (Critical Path Method), and other variants--were first used in connection with defense subcontracting and large-scale construction, but more recently have received some use in agricultural and rural development planning.

KEEPING TABS ON PROGRESS AND ELIMINATING BOTTLENECKS\*\*\*\*\*

5. Even with such analysis, there still may be some unforeseen problems as the program or project actually gets underway. Two kinds of setbacks may occur:

- a) Responses and results may not be as great or widespread as expected
- b) Action stages may be delayed for one reason or another.

This means that the effective organization--anticipating that some things may go wrong--needs to have mechanisms for i) getting accurate, timely feedback about what is happening and ii) responding appropriately either to remove the cause of difficulty or to modify program design in keeping with new insights gained.

6. Internal feedback about program progress and bottlenecks frequently becomes distorted or smoothed over because of targets and other administrative pressures for workers in the agency to show quick, tangible success. Or they may hesitate to be candid about problems encountered or to react honestly to the ideas and policies of higher-ups, for fear of being penalized or being regarded as "troublemakers." Visits by supervisors to program sites and field offices may be viewed more as "inspections" than as vehicles for positive administrative help and support. Sometimes these obstacles to honest feedback are more in the minds of technicians and field staff than in any overt administrative posture. Sometimes not. But in either case, if such a climate exists, it becomes very important for administrators to try to create an atmosphere--through personal example as much as possible--where it is made clear that honest attempts to be constructive will not be penalized and where candid two-way exchange of information and ideas is encouraged.

7. From the administrator's viewpoint, this kind of feedback is not very helpful--and may even "turn him off"--if staff members are just making excuses, or are always criticizing in a negative vein. (Being surrounded by "yes men" can be equally oppressive.) It behooves the program worker to try to diagnose the

cause of his difficulties, and to think through what could be done at one level or another to help set the stage for better results.

8. Within a general setting of encouraging good feedback, several operational questions need attention in organizing such efforts. Some of these are. . .

...From whom do you want the feedback--target-groups...program field staff... or whom else?

...What information do you want to have--emerging benefits to target-groups... program "output"... "success stories" for use in expanding program support... causes of delays or impaired performance...changing target-group needs as a basis for modifying future programs...or what?

...To whom does the feedback need to be conveyed--field workers...middle-level management...top-level administrators...special trouble-shooting units...legislators and key influentials...the general public?

...How quickly and often do you need the feedback? Daily or weekly, or much less often? At the mid-point or end of important program stages? On a regular basis, or as need be?

...How can you best go about getting the information and ideas? Should there be formal written reports? Should numbers be stressed? Should regular live channels be followed, or would it be better to have a special evaluation team or a cross-channel staff committee? Would direct visits to program sites be useful, or would indirect feedback be sufficient? Should the feedback process be distinct, or would it be better to make it an incidental part of other activities?

...How much time and money should go into feedback activities? Giving this a great deal of attention can be competitive with other things. On the other hand--up to a point--requesting staff and administrators to take some time out to report how things are going can be an effective means of "keeping their feet on the ground" and stimulating them to back away from day-to-day activities to reflect on where they are headed.

9. But merely generating reports and other feedback information for their own sake doesn't do a whole lot of good. There also must be mechanism, flexibility, and readiness to respond to needs and opportunities brought to light by this information. This may entail something as simple as expediting purchase of a replacement part for a piece of equipment. Or it may involve working out informal agreements with other agencies at the administrative level, so that workers can have better cooperation at the local level. Or it may even necessitate drafting of, and

lobbying for, changes in the program's enabling legislation to remove constraints against productive lines of action.

10. In agricultural and rural programs, various systems for improving feedback and agency response have been tried out, but there is still far to go in most programs. The usual situation is to require regular written reports (with numbers and/or narratives), to routinely circulate them among various supervisors and administrators, and then to file them away. Often, when a bit of information is actually needed for one purpose or another (e.g., success stories for use in getting funds for the legislature), a special request is sent out to workers on a rush, top-priority basis, even though very much the same information is already contained in previous reports. Or the staff member--having waited too long to alert administrators to potential problems--rushes in for emergency help to bail him out.

However, there have been some innovative attempts to improve upon this. One that is frequently cited has been the "Operations Room" and "Red Book" arrangement at the district, state, and national levels in Malaysia. This hinges around frequent reports from local workers about program phases that are behind schedule, bringing all relevant information about plans and actual progress together in a single place, and having key officials review the overall status of programs regularly with a view toward working out constructive ways to alleviate bottlenecks rapidly. Originally used in connection with self-help rural development work, this Malaysian feedback-response approach has subsequently been adapted to other programs.

Another example is the Puebla Project in Mexico, which has endeavored to bring together all the elements needed to help farmers modernize practices in timely, cohesive fashion. One feature of this project has been a special effort

to bring agricultural researchers into direct contact with the area and its people, so that they would know about priority needs and attune their research to the limitations in resources, capabilities, and willingness to change actually found among these farmers.

For some agricultural and rural programs of a repetitive nature, use has been made of critical path techniques to analyze why previous bottlenecks and delays have occurred, as a basis for more effective phasing of future programs of the same kind.

IS IT NECESSARILY WISE TO PLAN EVERYTHING IN ADVANCE?\*\*\*\*\*

11. The preceding has played up the notion that implementation steps need to be planned in advance, and bottlenecks avoided or eliminated, if programs are to be successful. Some development analysts would raise the point (see the writings of Albert Kirschman, for example) that worrying about all the details beforehand and evolving activities in "balanced" fashion may achieve less in the long run. They observe that trying to do everything needed to avoid bottlenecks can blunt the "cutting edge" of any particular component by diffusing attention to too many things at once...or that the very process of creating a bottleneck can lead to the critical mass of concern and effort really needed to solve the problem. Otherwise, it might not really be faced up to were a "crisis" never to develop. Furthermore, it can be argued, detailed analysis of all complexities in advance tends to underestimate human ingenuity in discovering new solutions as needs arise and may result in leaders steering away from very worthwhile activities that seem to have overwhelming difficulties at the outset.

12. Illustrative of this kind of dilemma are situations like India's where effective strategies and sequences are being sought for increasing food production

and making it readily available to low-income households. Should the government simply charge ahead and focus on stimulating farmers to modernize and expand grain production, assuming that means will be found to develop new grain storage, transportation, and processing facilities in response to later concern about not wasting the grain? Or would it be better to work toward improvements in the marketing system right from the start, even though it means diverting program resources from the work with farmers? Arguments for both viewpoints are abundant.

13. In conclusion, the point might be made that planning and "imbalance" in program implementation are not necessarily incompatible. A program leader could be fully aware of probable bottlenecks and yet still find it expedient to incorporate them intentionally as a lever to generate threshold level of concern and/or needed additional support--e.g., going ahead with construction of an irrigation system even though he doesn't now have the funds to finish it. But this sort of strategy can be dangerous too. Even though a program official or worker may be "bailed out" by others this time, he may find it very hard to gain support for other proposals in the future. Herein lies a challenging analytical problem that systems analysts may be able to help solve: How far to go in purposely planning for bottlenecks and out-of-phasing in order to maximize overall program success?

## Agricultural and Rural Program Planning

### UNIT K. GEOGRAPHICAL ORGANIZATION OF PROGRAMS

1. So far we have discussed two dimensions of program implementation-- (a) functional organization and structuring and (b) phasing and timing. A third set of implementation questions has to do with the spatial dimension. Should program activities be based in only a few centers, or should there be many local outlets? What criteria should be used to determine the area to be served by any one sub-unit? If the program is to start small and then expand geographically, what basis should be used to decide where to go next? Does it make sense in the first place to subdivide the program along geographic lines?

#### A FEW CENTERS VS. MANY SUB-UNITS\*\*\*\*\*

2. The decision as to how far to go in subdividing a program geographically frequently involves a compromise between two opposing sets of considerations:

- a. Pulls that favor a few large central units--economies of scale in management operations and in utilization of specialized staff, facilities, and equipment. . . greater ease of internal communication and coordination. . . more stimulation of effort and thought among professional workers by having day-to-day contact with colleagues.
- b. Pulls that favor spatial decentralization of outlets--more opportunity for regular contact with program clientele and understanding "grass-roots" problems. . . less staff travel time and cost to program sites, and greater clientele convenience in seeking help. . . greater flexibility to adapt program content and methods to local needs and opportunities. . . less danger of excess day-to-day supervision. . . closer identification of local people with program progress and success.

3. The best answer will depend on a number of elements, such as: potential cost savings from centralization; target-group numbers and densities; the extent to which problems, potentials, and clientele characteristics differ from one place to another; the importance of keeping in close touch with field activities, target-groups, and local leaders; need for, and availability of, specialized services; geographical organization of other programs with which close coordination is essential; the levels from which financial and other support for the program emanate; the degree to which standardization of procedures is critical. And, of course, the spatial structuring that is most appropriate at one time or program stage may change later on.

Programs that revolve heavily around clientele felt-needs and local leadership involvement--organization of coops, farmer associations, or communities, for example--work best with field workers in or near the localities who have flexibility to modify and improvise as they go along. An agricultural extension program in the initial stages of generating farmer interest and modernization will likewise need accessible local outlets, but later on--as farmers become more commercially oriented or travel becomes easier--it may be advantageous to cluster staff at more central points. In agricultural research related to "basic" technological development, having large enough centers to afford good equipment and libraries, as well as breadth and depth of contributing specialties, becomes a dominant factor. Even in research for testing results in various locations, it may be possible to keep professional staff clustered by relying on a network of unmanned experimental plots.

CRITERIA FOR DELINEATING SPATIAL PROGRAM UNITS\*\*\*\*\*

4. For programs where subdivision of effort into spatial program units (SPU's) is appropriate, either or both of two kinds of criteria may be considered:

- a. Homogeneity, where the farms, families, or localities encompassed by any one SPU are similar with respect to one or more characteristics of special program relevance.
- b. Interdependency, where the farms, families, or localities in any one SPU are linked together in some special way.

Programs that are divided into homogeneous areas might use such features as the following to delineate SPU's:

- ...Agronomic potential (similar soil, climate, topography, etc.).
- ...Agricultural growth potential, including not only agronomic considerations but also marketing prospects and status of existing infrastructure and technology (Arthur Mosher's IGP, FGP, and LGP areas for instance<sup>1</sup>).
- ...Dominant type of farming.
- ...Average income levels.
- ...Dominant farm size or tenure pattern.
- ...Dominant ethnic or religious groupings.
- ...Dominant political leanings or extent of unrest.
- ...Degree of urban (or rural) orientation.
- ...Non-farm employment growth potentials.

Examples of SPU's based on within-area interdependencies would be:

- ...Units from which traditional government services emanate (counties, districts, provinces, states, etc.).
- ...Areas or regions previously used for developmental planning and implementation (e.g., the Development Blocks of India, or the new Development Planning Districts in the U. S.).
- ..."Functional economic areas," each consisting of a nodal town, or city, and the surrounding localities which form a highly self-contained complex with respect to living services, wholesale and retail trade, and work commuting patterns.<sup>2</sup>

<sup>1</sup>See A. T. Mosher, Creating a Progressive Rural Structure to Serve a Modern Agriculture, Agricultural Development Council, New York, 1969.

<sup>2</sup>See especially the writings on this by Karl A. Fox of Iowa State University.

- ...Agricultural trade and service areas, each including a central market town and a network of outlying areas where farm products are sold and supplies bought. (May or may not coincide with functional economic areas.)
- ...City "bread<sup>d</sup>baskets," encompassing the surrounding areas from which most fresh produce consumed in the center comes. (Not so appropriate where trade, processing, and transportation highly developed.)
- ...Community affiliations, encompassing an area with which local people identify on historical, communicative, or social-interaction grounds.
- ...Sphere of personal influence, embodying the area covered by an inter-linked hierarchy of key leaders and legitimators.
- ...Watersheds--location in a common drainage area or river basin (e.g., soil conservation districts, and the region served by TVA).

5. In practice, a particular program may be have two or more "layers" of geographical subdivision, each of which may use a different criterion for delineating SPU's. For example, an extension program may be structured at the higher levels along political-division lines (states and districts or counties) but for particular local thrusts be organized according to agricultural growth potential (immediate, future, low). Or a rural antipoverty program may be offered only in states that have low average family incomes but, within these states, built around functional economic area delineations.

#### GEOGRAPHIC PATTERNS OF PROGRAM EXPANSION\*\*\*\*\*

6. It often is not possible right away to carry out a program in all the spatial units that have been delineated. Agency resource limitations may make it necessary to begin in only a few places and then gradually expand, or shift, to others.

7. In such situations a number of possible expansion sequences can be considered. Five of these are:<sup>3</sup>

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<sup>3</sup>This section draws on a useful classification presented by Earl M. Kulp, Rural Development Planning, Praeger, New York, 1970, pp. 76-78.

- a. Contiguous spread (called by Kulp the "oilspot" or "vector" option), in which the program moves gradually outward from the initial areas into adjacent areas. The idea is to capitalize on any momentum or "snowball" effects as fully as possible, as well as to minimize travel and other agency support costs.
- b. Even spread, in which the program starts out in, say, one district of every state and then expands to a second district of every state, etc. Reasons for favoring this option may include i) wanting to test something new under as wide a range of situations as possible, ii) avoiding geographic favoritism, iii) hoping for some no-cost "spinoff" effects in surrounding areas, and iv) making a token show of doing something that is visible to as wide a segment of the population as possible.
- c. Greatest payoff first. Priority may be in order of expected benefits to target-groups (e.g., farm income gains) or something not directly related to program objectives (e.g., gaining more votes or quelling rural unrest).
- d. Greatest need first. Here again, order of priority may be related directly to program objectives (e.g., lowest-income counties first) or to extra-program concerns (e.g., land settlement near shaky political frontiers).
- e. Highest bidder, in which the program is expanded to those places that offer the most in terms of supporting contributions, interest and zeal, and/or ready-to-go organization. Other things being equal, good performance in previous efforts of the same kind may be a factor. ~~This may be a factor.~~ This may or may not be consistent with expanding in response to greatest pressure for help.

8. Of course, the objectives leading to establishment of the program in the first place will have much bearing on which expansion option is rationally chosen, and two or more of these options may enter into consideration.

GEOGRAPHIC VS. CATEGORIC BASES FOR PROGRAM ORGANIZATION\*\*\*\*\*

9. Beyond a certain point, it may not make sense to subdivide a program along geographic or cartographic lines. It may be more appropriate to determine eligibility for help, and priorities for program expansion, on the basis of the characteristics of individual farms, families, or communities rather than how they happen to be located geographically.

Take for example a supervised credit program aimed primarily at helping young low-income farmers to get a better start. To make its special benefits available to all farmers in those counties that have high percentages of young low-income farmers would result in use of funds and staff time for other than the main purpose. I.e., older or wealthier farmers would be eligible for this special help just because they happened to be in one of the program's areas. So it would make more sense for agencies like this not to classify whole counties or districts as being either "in" or "out" of the program, but to define eligibility in terms of categories related to individual characteristics.

10. Of course, using a "categorical" approach has its costs too, for it requires detailed information about the individuals or groups who seek program assistance--what social workers call a "means test." So a trade-off between this and the easier-to-define geographic classification is often entailed. In general, a geographic approach becomes relatively more appropriate where almost everyone in a region is in the same situation, and the categorical approach becomes more suitable when the persons or groups of special concern to the program are scattered in the midst of others who don't merit special attention in terms of program aims.

UNIT L. THE "HUMAN ELEMENT" IN GETTING PROGRAMS GOING--  
LEGITIMATION, MOTIVATION, AND LEADERSHIP

1. Despite comprehensive planning, structuring, and phasing, program success is often disappointing because people haven't responded to the extent, or in the way, that was expected. This may happen in an agency's relationships with external groups, in internal behavior, or both. How often have you heard..."It would have worked except...the farmers didn't adopt the practice being promoted...or, the local leaders opposed the program...or, old-timers in the agency resisted the new leadership...or, there was a lot of in-fighting between two agencies."

2. So, underlying much of what has been discussed in the previous units related to program planning and implementation is a strong need to be sensitive to the roles that people have, how they are motivated, how they interact with one another, who can influence their behavior, and what can spur them on to greater accomplishment. These considerations will not only affect how a program is most effectively put into operation, but will also have important bearing on program design in the first place. The purpose of the notes that follow is to highlight some characteristics of human behavior that are frequently overlooked by program planners, leaders, and technicians.

**PINPOINTING WHO CAN DO WHAT\*\*\*\*\***

3. Failure to delineate the roles that groups and individuals do or could have--and how this meshes with program needs--can lead to much frustration and disappointment. When a planner or consultant writes a report saying "...such and such must be done..." as though some all-encompassing individual or agency has the scope and authority to accomplish this in one blow, chances are that the ideas will end up just there--in a report. For usually it is a matter of a series of decisions and actions involving more than one person or group. And the change-agencies themselves

may only be able to set the stage and try to induce certain behavior by others, rather than having much directly to do with final response or accomplishments. So, it behooves program designers to think through in some detail who can make the needed decision, or take the needed action, or provide the needed help...and, in turn, what strategies would be most effective toward gaining the desired responses by them.

HAVING EMPATHY FOR HOW OTHERS VIEW THINGS\*\*\*\*\*

4. In seeking desired response or cooperation on the part of others, either within or outside an agency, you won't usually get very far unless you try to envision how they perceive your proposals and actions. Will what you are suggesting or doing make them better off in terms of their felt needs and aspirations...or at least not hurt them? Is what you're asking them to do in keeping with how they perceive their own roles and status? In what you're doing or proposing, do they see you as "stepping out of bounds" beyond your own accepted role or status? Do they have confidence in, and liking for, you and the group you represent?

5. One thing to note in this regard is that, although what you are proposing for other persons or groups to do doesn't make them worse off than before in absolute terms, they may resent being "used" for the benefit of you or a third party. I.e., an element of jealousy may enter in, and in relative terms they may perceive themselves as being hurt by the proposal.

6. Moreover, these other individuals or groups may be suspicious of your motives. Even though you may be able to demonstrate how they too can gain by cooperating with you, doing what you suggest, or accepting your offer of help, they may wonder if you aren't "empire building" or up to something else at their expense. This reaction can be common among rural people, professional workers, and agencies in

societies where it has traditionally been a matter of "dog eat dog" just to survive, or where the government has had a history of concern only with taxation and regulation. The idea of altruism may just not be conceivable in such settings.

WHO ARE THE BEST PERSONS TO "OPEN DOORS"?\*\*\*\*\*

7. In inducing people to listen to new ideas or to agree to do something, careful attention must be given to who has rapport with, and influence on, them. As sociologists would say, there is need to legitimate proposals and actions through the use of key influentials or opinion leaders.

For example, a farmer may not be inclined to join a new marketing co-op unless other farmers whose judgment he respects decide to join too and say it's a good thing. County agents in a meeting with their supervisors may not respond enthusiastically to a proposed new program thrust until and unless key influentials among them react favorably to the idea. A community development worker who comes from another region or socioeconomic background is not likely to get very far if he doesn't soon gain the help of local opinion leaders in reinforcing the ideas he's trying to "sell."

8. The persons who can be most influential in legitimating ideas and programs will not necessarily be those who hold official leadership positions, or who are the wealthiest, or who have the most education, or who are the most popular, or who have the highest social standing. In fact, relying on such individuals can be a fast way to "turn off" some groups you're trying to reach. In acceptance of new practices, it may be that a farmer who is known for his sound judgment is most influential on others, even though he isn't the most innovative or richest farmer in the area. A "local boy" who went to college and came back to teach school may have more influence

on attitudes toward improvement of local government services than any number of outside experts who are brought in.

9. Not all persons in a group or locality will regard the same individual as an opinion leader. A hierarchy may exist, whereby people tend to look to persons slightly above their own status for guidance and reinforcement. There may be a network of subspheres of influence stemming from aspects of life beyond the immediate activity--family ties, ethnic groupings, political affiliations, religion, etc.

10. Any one individual may regard different persons as legitimators for different kinds of issues. For example, a farmer may value the opinion of a neighboring farmer when considering new practices, but may weight heavily the opinion of his clergyman when deciding how to vote on community improvement proposals.

THE APPEAL OF INVOLVEMENT\*\*\*\*\*

11. One lesson learned from historical experience with extension, community development, and other local-action programs is that people are much more inclined to have favorable attitudes toward, and dynamic response to, a new activity if they actually have a hand in its design and execution. This is true for two reasons: (a) the final program design is more likely to reflect felt-needs and useful insights from "grass roots" levels, and (b) there is closer psychic identification with the activity and its success for having participated in its formulation.

12. This concept of involvement is a major reason why lay advisory committees at county, state, and national levels are an integral part of such programs in the U. S. as the Cooperative Extension Service, the Farmers Home Administration, the Soil Conservation Service, and the Agricultural Stabilization and Conservation Service. It is also reflected in the use of parents as 4-H Club leaders, and the emphasis on self-help and local organizational leadership in many community improvement efforts.



to circumstances. In general, the "in-charge" leadership approach is likely to result in greater continuity, ease of changing program directions, and less danger of mistakes. But often offsetting this is reduced productivity because associates feel "bottled up" in their ideas and capabilities, as well as "used" toward the glorification of the leader himself.

16. Closely related to this is the question of how fast and far to "push" people and activities. A leader who always imposes very high expectations, or who is always two jumps ahead of everyone else in terms of imagination and pace of ideas can have a very dampening effect on the interest, energies, and creativity of his associates. Sometimes it is better to tone down his own targets and ideas a bit, and leave "elbow room" for others to amplify the notions and activities that he has "seeded." This can result in greater endeavor and accomplishment from workers by feeling they're doing something extra on their own, rather than always falling short of some higher expectation.

UNIT M. ENHANCING WORKING RELATIONSHIPS AMONG

KEY PROGRAMS OR COMPONENTS

NEEDS FOR CROSS-AGENCY LINKAGES\*\*\*\*\*

1. Seldom can program objectives be effectively achieved by a single change-agency or agent in isolation from others. Working at cross-purposes with one another having gaps and overlaps in function, and being out of phase all can be serious detriments to overall performance. Others may have useful insight, or competency, or "connections" to offer that would enhance your own efforts and, perhaps, you in turn have contributions to make that would help them too.

Examples: A community development program promoting a new hospital in a small town, while the development planning district is moving ahead with a regional medical network. . . a campaign to encourage use of high-yielding rice varieties undertaken without provision being made for adequate supplies of the improved seed. . . latent potentials for a credit program to enhance farmer response to extension efforts, and vice versa. . . use of interdisciplinary research teams to tackle complex problems.

2. The notes which follow suggest some possibilities and considerations in achieving closer relationships among groups or persons, either or both of whom stand to gain by better communication or coordination--how far to go in fostering and institutionalizing such linkages, and how to undertake such most effectively. The focus here will be on linkages among agencies, or units within such agencies that have common concern with a particular problem or target-groups. Much the same line of thought would be appropriate for interrelating with other groups with which a given program has "interfaces"--e.g., special interest groups or the policymakers that undergird the program.

POSSIBLE EFFECTS OF BETTER LINKAGES\*\*\*\*\*

3. Closer communicative or action links with others can introduce either of

- a. Information that will help you to take more appropriate actions--facts about target groups whom you want to reach. . . feedback about the results of efforts by others to do something similar. . . information about what others are doing, or intend to do, so that you can make your plans accordingly. . . etc

Generation of responses by others that will be in closer accord with or augment your own activities--better meshing of purpose, scope, and focus. . . better time phasing. . . contributions of time, resources, or expertise. . . help in gaining footholds with target-groups. . . etc.

Such information or response may or may not carry benefits to both parties. Three kinds of cross-impacts in terms of performance are possible:

- a. Supplementary--where another group can help you, with no particular gain or cost to it, or vice versa. (E.g., finding out what a research colleague is doing so that you can plan your next project to avoid duplication.)
- b. Complementary--where, by keeping mutually informed or by linking activities, you and another group can enhance one another's effectiveness. (E.g., feedback from extension workers to research specialists about problems needing attention and, in turn, timely extension dissemination of new research findings. . . interdisciplinary analysis of rural power problems. . . multi-agency sharing of a computer facility.)
- c. Competitive--where, by helping you, another group has to sacrifice effort or results in another phase of its activity, or vice versa. (E.g.,

diverting extension workers from on-going educational work to give special help to a new land settlement project.)

5. The kind of cross-impact that results will affect the extent to which intro-group linkages can be usefully sought and the way that this can best be accomplished.

If supplementary, you normally can expect to obtain voluntary help up to a point but, if the other party is pressed too far, this may start detracting from its regular work; i.e., it may become competitive.

If complementary, you can expect the other party to want to cooperate without any coercion or compensation.

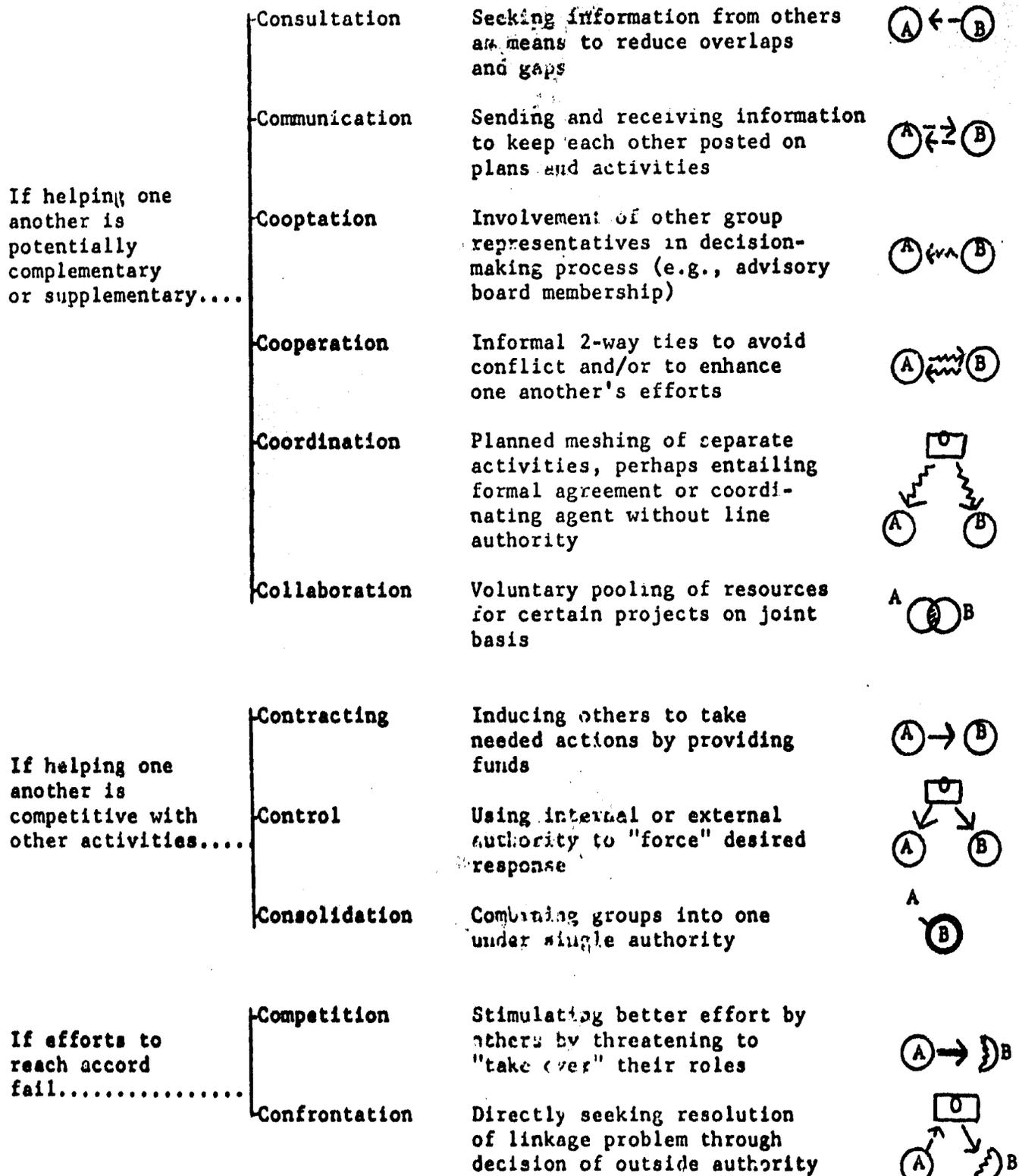
If competitive, it may be necessary to obtain the desired help through special inducement, such as imposition of authority, or financial reimbursement, or threat of cutting off current assistance to the other party.

WHAT STRUCTURAL FORMS SHOULD LINKAGES TAKE?\*\*\*\*\*

6. To carry this one step further, there is a continuum of possible structural avenues that an agency or worker can consider in his effort to generate help or response from others. These range from informal exchange of information all the way to imposition of authoritative control to induce the desired action.

7. In general, as one moves down the "C-chain" shown in Figure M.1, an increasing degree of "forcefulness" and structural complexity is entailed. But there is less possibility of "slippage" in obtaining the desired help or response. The decision as to how far down the chain to go centers around two considerations:

Figure M.1. "C-Chain" Showing Gradients of Possible Means to Induce Intra- and Inter-Group Linkages



- a. The inherent nature of the linkages being sought (whether supplementary, complementary, or competitive).
- b. The skill used in handling the linkage at any one level, and the other party's receptivity to it (behavioral approaches and relationships).

In other words, by fostering clear understandings and good informal relationships among the groups or individuals involved, it may be possible to obtain the desired reinforcement without having to resort to as much structuring or inducement as may otherwise be called for.

MAKING THE MOST OF GIVEN LINKAGE FORMS\*\*\*\*\*

8. Here is where some concepts discussed earlier can usefully come into play--empathy for the insights, capabilities, and motivations of others. . . legitimation. . . involvement. . . behavioral approaches to organization. . . gaming. And there is a whole body of emerging thought encompasses in information-, communication-, and persuasion-theory that is very relevant.<sup>1</sup>

9. So the agency worker or administrator who wants to make the most of opportunities to establish closer working relationships--or at least establish better communication--with another group might usefully ask himself the following kinds of questions:

...What is it I basically seek from the other group--some information, more productive links between their activities and mine, a commitment of some of their resources, or something else?

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<sup>1</sup>For a comprehensive review and synthesis of concepts for effective inter-group information exchange and use, see Ronald G. Havelock, Planning for Innovation Through Dissemination and Utilization of Knowledge, U. of Mich. Institute for Social Research, Ann Arbor, 1969.

A text that focuses more on potential-conflict (competitive) situations is: Ervin B. Bettighans, Persuasive Communication, Holt, Rinehart, & Winston, N. Y., 1968.

...As they perceive things, will this enhance their own endeavors, or will my request be an imposition? Is their perception accurate? Am I asking them to do something that is beyond their authority or capability? Is there a way that I can modify my request or proposal to be more compatible with their capabilities and aims?

...If my request is in fact competitive with their activities or concerns, is there a way that I can induce their help without resorting to authority --e.g., offering to help them in return for their favor, or reimbursing them?

...How can I best establish contact and interest in my proposal--explore things informally with a friend of mine in that group, and ask him to help get me in touch with the appropriate people. . . ask my boss to make an official approach to the head of that group. . . involve a representative from their group in the formulation of our plans. . . get an "outside" person for whom they have respect to "say a good word". . . or what?

**DOES MUTUAL HELP MAKE SENSE IN THE FIRST PLACE?\*\*\*\*\***

10. Sometimes getting other persons or groups to help or to work jointly with you can be more trouble than it's worth. There may be serious negative attitudes to overcome, or a lack of vigor and imagination that would have a dampening effect on your efforts. Or the very process of opening up and maintaining communication or coordination channels may involve so much time and effort that it detracts seriously from actual program progress--e.g., having to check with a coordinating group every time you want to try something new.

11. If getting others to work with you seems hopeless, or too complex or costly in terms of effort, two substitute courses can be considered:

- a. You could threaten to embark on the desired action yourself, even though it lies within the other party's "territory," in hopes that it will spur them into doing the things needed to make your program more effective.
- b. You could "take the bull by the horns" and actually perform the needed activity yourself, even though it means duplication of facilities or effort.

12. Such strategies are usually employed as "last resorts," but it could be quite rational--having weighed the benefits and costs of these against trying to get others to cooperate--to turn to them before that stage.

EXAM - July 20, 1971  
Agricultural Economics 4250  
Agricultural and Rural Program Planning

Indicate by encircling the appropriate letter whether you agree with (A), disagree with (D), or are unsure about (U) each of the statements below. Underlining is used to emphasize key points.

If you agree, briefly elaborate or illustrate.

If you disagree or are uncertain, briefly explain why.

Complete sentences are not needed; write just enough to make your points clear.

1. An example of "opportunity cost" is the direct marginal outlay--added numbers of county personnel, travel expense, etc.--associated with the introduction of a new nutrition education program.

A D U

2. It is not necessarily true that a change-agency must be primarily devoted to helping its target groups to improve their own well-being.

A D U

3. One way to eliminate all "slippages" between plans for agricultural modernization and the actual changes taking place on farms is to place all farming operations under direct control of government agencies.

A D U

4. The most effective way to make rational decisions about how to allocate change-agency resources among alternative possible uses is to estimate the total benefits and total costs associated with each alternative.
- A D U
5. In deciding which target groups to give priority to, about the only thing the administrator of a multi-purpose community improvement program can do is go by his own personal preferences (value judgments).
- A D U
6. As we have used the term in this course, an example of a "trade-off" is where one agency offers to assist another agency in return for its help in working toward the same objective.
- A D U
7. A plus-and-minus chart is a way to show schematically how action proposals compare in terms of each relevant objective or constraint, but in itself doesn't tell which proposal is the best.
- A D U
8. One criticism that can be made of conventional benefit-cost analysis to establish project priorities is that it doesn't say much about who specifically gains or loses.
- A D U

9. To predict the likely outcomes of a new extension program, it could be more accurate to use the subjective judgments of personnel who know the area than to depend on the quantitative results of a pilot program conducted elsewhere.  
A D U
10. The main rationale for compounding (or discounting) benefits and costs of long-term project proposals is that interest costs of borrowing funds to finance the projects need to be reflected in the comparisons.  
A D U
11. Suppose that two anti-poverty program proposals are being considered: (A) "conservation corps" jobs for those who can't find work and (B) improved vocational training in the high schools in low-income communities. By the end of a 15-year "economic horizon," the direct annual income generated would be the same for both--\$60 million. The gains from Alternative (A) would be spread evenly over the 15-year period; the gains from Alternative (B) would be bunched toward the end of the period. It would therefore be advantageous to choose Alternative (A).  
A D U
12. Linear programming is a technique that can be used to determine optimum strategies where a change-agency is encountering active opposition from another group.  
A D U

13. Suppose that experts guess that sleeping sickness-control research will have an "expected payoff" of \$80 million and the odds of a new breakthrough will be 30%, whereas emphasis on livestock nutrition research will have an "expected payoff" of \$50 million and be 90% sure of accomplishing something. It would therefore be rational to concentrate on the sleeping sickness research.

A D U

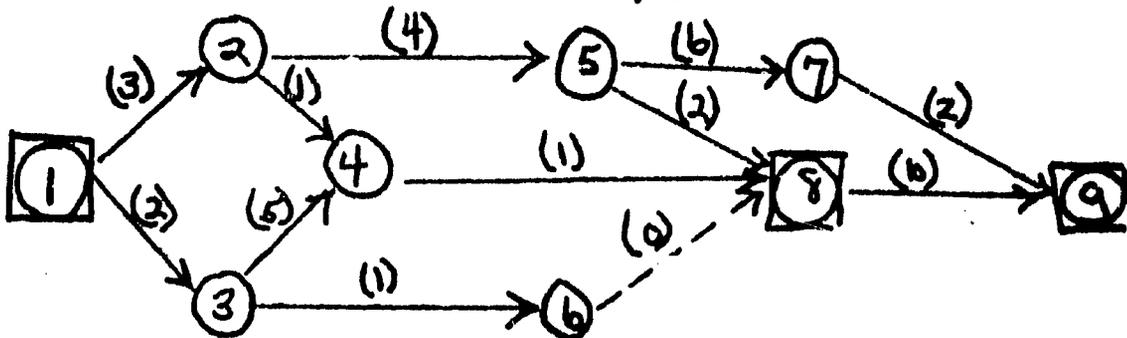
14. In order to maximize long-run program payoff, it will always make sense diversify activities.

A D U

15. To be as vigorous and innovative as possible, it is very important to see to it that a program is well coordinated and tightly administered.

A D U

16. Following is a PERT-type diagram for implementing a community development project, showing times involved in days:



The critical path would be 1-3-4-8-9.

17. Suppose that activity 4-8 had to be lengthened to 4 days. The critical path would then become 1-3-4-8-9.

A D U

18. Making low-interest loans available to all farmers located in counties which have average farm sizes of 50 acres or under is an example of a categorical criterion for determining eligibility.

A D U

19. To be most efficient, agricultural extension programs should be organized into districts that coincide with functional economic areas.

A D U

20. A coal mine owner would probably be a good legitimater for convincing his miners that it would be a good thing to raise vegetable gardens to augment their earnings.

A D U

OVERVIEW OF CHANGE-AGENCY ROLES AND DECISIONS

Core Readings

Unit A summary, Introduction (handout).

Unit B summary, Change-Agencies as Vehicles for Agricultural Modernization and Rural Development (handout).

David W. Brown, Putting Rural Development Policies into Action (handout).

David W. Brown, Rural Development Agencies as Decision Makers (handout), Read pp. 1-2 and scan the rest.

For discussion in class

1. Thinking of a place where you have lived or worked, what are some key educational, research, and action programs aimed especially at farmers or rural people?
2. In terms of my awareness-capability-motivation framework, what function(s) does each of these programs serve in stimulating these target-groups to make changes or in improving their well-being? I.e., what elements do these programs facilitate that would not be possible were the farmers or rural people left "on their own"?
3. For each of these programs, is the basic objective to help farmers or rural people improve their own well-being, or is it to induce these target-groups to make changes desired by other groups in the area or nation?
4. Thinking of a change-agency that you have special knowledge about or interest in, what are some major alternatives that can be considered in deciding whom to reach, what to do, and how to go about it?
5. (If you have previous experience with this change-agency) What in your judgment have been the most important elements that have impaired fuller effectiveness--shortsighted planning? poor organization? vague objectives? oversensitivity to political pressures? poor relations with other groups? lack of resources? or what?

WHAT PROGRAM PLANNING IS AND DOES

Core Readings

Unit C summary, What Program Planning Is and Does (handout)

Rainer Schickele, Motives and Criteria for National Agricultural Planning (Ag. Library Reserve). Read pp. 1-16 especially.

Ben W. Lewis, Jordan Is People: So Is Economics (handout).

David W. Brown, Some Thoughts About Agricultural Development Planning (handout). Skim, noting pp. 11-12 especially.

For Discussion in Class

1. Based on the readings you have done so far and your own common sense, what purposes can planning at the national policy levels, as well as at operational program levels, serve?
2. Schickele distinguishes between two kinds of planning: allocative planning and institutional framework and incentives planning. Thinking particularly of your home area or places where you have worked, what are some examples of public actions and programs that relate to each category?
3. Sometimes policymakers and planners at national or local levels are prone to think that passing laws, appropriating funds, formulating long-term plans, or establishing targets will automatically insure desired socio-economic changes in agriculture or other sectors. What kinds of "slippages" may take place that impair or distort actual achievement of results?
4. Some persons stress agricultural program and policy planning "from the top down," whereas others would build up regional and national plans from felt needs at the "grassroots" level. What are some pros and cons about this? Can the two approaches be blended together?
5. In one important sense, a county agent, or a community development worker, or an agricultural researcher can be a "planner" just as much as persons in national government departments and planning agencies. Explain how this is true.

### CONSTRUCTS FOR PROGRAM DECISION-MAKING

#### Core Readings

Unit D summary, A Framework for Operational Decision-Making (handout).  
David W. Brown, Rural Development Agencies as Decision-Makers (handout). Read pp. 2-6.  
(If you haven't had much background in economics, you may find it helpful also to review sections in an introductory economics or agricultural economics textbook related to the "opportunity-cost" or "equal-marginal" principle.)

#### To be Handled in

As a "warm-up" for the program design problem that you individually will be tackling during the remainder of the term in exercises and in the end-of-term diagnostic report, jot down (in outline form if you wish) some notes about the following:

1. What specific agency, program, or decision-situation are you planning to focus on?
2. What group or groups is the program trying to help?
3. What goals (kinds of changes or accomplishments) are of primary concern?
4. What constraints need especially to be taken into account--e.g., limitations in personnel, facilities, funds or administrative capacity; pressures for quick results; avoiding negative effects on other groups; attitudes of people--when pinpointing the relevant possibilities?
5. What key persons or groups are involved in making decisions for the program?
6. With the scope of the problem as you have delineated it, what key decisions have to be made, and what basic alternatives can be considered for each? For each decision, is this primarily a matter of either-or, ordering of priorities, sequence, or "mix" of activities?
7. Is this a situation that lends itself to a synoptic decision-making approach (e.g., designing a major new program from scratch) or would a partial incremental approach be more appropriate (e.g., evaluating proposals for modest modifications in an on-going program)?

The purpose of this exercise is to help you relate the decision-making constructs in your readings to the particular situation that you have in mind, as well as to let me know what you propose to focus on. If you have difficulty in selecting a problem or in delineating a specific aspect, I'll be glad to help you.

## GOALS, CONSTRAINTS, AND DECISION-CRITERIA

### Core Readings

Unit D summary, More on Goals, Constraints, and Decision-Criteria (handout).  
David W. Brown, Rural Development Agencies as Decision-Makers (handout), pp. 6-7.  
David W. Brown, Some Thoughts about Agricultural Development Planning (handout),  
pp. 7-9.

### To be Handed in

Thinking again of the farm problem that you are focusing on...

1. What primary criteria (operational objectives or results) would seem to be appropriate for evaluating the program alternatives that can be considered? Are there any secondary criteria (side effects, time constraints, etc.) that apparently need to be taken into account too?
2. Is this the kind of situation where there are important "trade-offs" among competing objectives when considering program alternatives? Or is it more a matter of how to work toward a single dominant objective most effectively?
3. If you were a planner or decision-maker with the agency and the objectives were not clearly defined or weighted, how might you go about pinpointing these more precisely?
4. Is this the sort of situation that lends itself to use of quantitative targets for either stimulating greater effort or measuring progress? If so, would these best be at the level of final impacts (e.g., farm income changes), target group response (e.g., no. of farmers adopting new varieties), agency "output" (e.g., no. of local demonstrations), or what? What specific measurable indicators would be most appropriate?

**METHODS FOR EVALUATING ALTERNATIVES AND ESTABLISHING PRIORITIES**

**Core Readings**

Unit F summary, Some Operational Methods for Evaluating Program Alternatives  
(Handout).

George Waldman, Seminar on Program Budgeting in the U. S. Department of Agriculture  
(Handout). Skim.

**To be Handed in**

In connection with your term problem example, chances are that there is a key decision to be made for which two or more courses of action can be considered. And chances are that these alternatives need to be judged not only in terms of impacts on a certain major goal or group, but also in terms of additional considerations such as effects on other groups, drain on agency resources, difficulty of administering, or speed of results.

Try to develop a "plus-and-minus table" that shows the relative effects of these alternatives in terms of each criterion, as best as you can guess at this stage. (See pp. 5-6 in the Unit F summary.)

Is one alternative clearly advantageous in all respects, or is a "trade-off" involved?

**SIZING UP PROGRAM NEEDS, FORMULATING PROPOSALS, AND ESTIMATING OUTCOMES**

**Core Readings:**

Unit G Summary, Pinpointing Program Needs and Possibilities (handout).

David W. Brown, Sizing Up the Situation in Rural Development and Agrarian Reform Planning (handout). Skim.

**To Be Handed In:**

Focusing once again on your individual term example:

1. Is yours the kind of situation for which it would be helpful to conduct a benchmark study to identify priority target-groups, to pinpoint existing obstacles that prevent them from making the desired changes, and/or to delineate courses of action within the scope of your proposed program that would be most relevant for consideration in helping to alleviate these obstacles?

If so, what kinds of information would you seek, and from what source(s) would you get this?

2. Based on what you now know (or have assumed), develop a "decision profile" which summarizes schematically the alternatives that can be considered for each of the major kinds of decisions that need to be made in connection with your example. (See page 4 in the Unit G Summary for an illustration. Incidentally, the title of that figure should be. . . Credit Program, not Credit Union.)
3. For one or more of the key decisions that have to be made in your example, how might you go about estimating the likely results ("input-output relationships") associated with the alternatives that can be considered? What possible "slippages" between the program-input stage and the final impacts on target group need to be taken into account? (You may want to tackle this question in terms of the alternatives and just one or two of the criteria shown in your earlier plus-minus chart.)

DECISION COMPLICATIONS AND REFINEMENTS

Core Reading:

Unit H Summary, Some Decision-Making Complications and Refinements (handout).

(For some sources of further detail, see reading lists #71-31 and #71-33.)

For Discussion in Class:

1. Explain in your own words the underlying rationale for using "discounting" or "compounding" to compare project proposals with differing gestation periods.
2. In program planning you may encounter (among others) two situations that seem to be paradoxical: (1) a high-risk situation in which there is perfect knowledge about possible outcomes, and (2) a low-risk situation in which there is little knowledge about possible outcomes. How can this be? Can you think of examples of each?
3. Is your individual term problem of such a nature that (1) discounting, (2) risk-analysis, and/or (3) game theory would be useful as aids to making any of the decisions involved?
4. Can you think of other program-decision examples from your own experience for which these analytical approaches would be appropriate?

**CREATIVE PROGRAM ORGANIZATION AND ADMINISTRATION**

**Core Reading:**

Unit I Summary, Creative Organisation and Administration (handout).

A. T. Mosher, Administrative Experimentation as a "Way of Life" for Development Projects (handout).

W. S. Sayre, Organizing for Innovation within Government (handout).

Also, as one of your personal exploratory readings, you may find very helpful the article by Saul Katz, Administrative Capability and Agricultural Development: An Institution-Building Approach to Evaluation (on reserve and in the Dec. 1970 issue of the Am. Jour. of Agr. Econ.).

**Questions for Discussion and Thought:**

1. As you read Sayre's article, think of an agency or program that you know about that does not seem to be as progressive, dynamic, or effective as it could be. What appear to be the major causes of its failure to be more innovative or productive--unwillingness of administrators to "stick their necks out" or to offend certain groups...excessive red tape...lack of enthusiasm and dedication...poorly qualified personnel...constraints of enabling legislation or low budgets...or what? Is the failure to innovate more (1) policy (program content) or (2) procedural in nature? Does this stem primarily from external or from internal sources?
2. Suppose you took a middle-management position with this program. What are some things that you might do to help generate greater innovativeness and productivity within the scope of your responsibility and influence?
3. Dr. Mosher favors trying out, modifying, and evaluating new program ideas as an integral part of on-going programs, rather than starting out with pilot or experimental approaches that are more separate, visible, and rigid. What are pros and cons of this?
4. In thinking about the implementation of the program related to your individual term problem, are there one or more basic organizational approaches that seem especially appropriate? Are there some unique problems that need special attention in getting the program going--e.g., getting diverse groups to work together, locating personnel with scarce skills, organizing logistical support, etc.? Are there some particular dangers to avoid when implementing the program?

**PROGRAM PHASING AND BOTTLENECK ELIMINATION**

**Core Reading:**

Unit J Summary, Prevention and Alleviation of Program Bottlenecks (handout).

Office of Economic Opportunity, PERT for CAA Planning, Vol. I, Sections 1 through 4 (on reserve in the agricultural library).

Clair Wilcox, Malaysia's Experience in Plan Preparation and Implementation (handout). Especially pp. 5-10.

We shall be discussing this in class on Thursday, so doing some of the above reading before then would be very helpful.

The main thing is to start studying OEO's PERT for CAA Planning, which is a programmed instruction manual that explains the idea of network pathing in as simple and systematic fashion as anything I've seen. It will take you three or more hours to go through the four sections assigned, and you probably will want to do it in two or more sittings. There are five copies on reserve but, even so, you'll want to get started on it well in advance to avoid the last-minute rush. Copies of the second volume are also on reserve in case you care to dig into PERT further. To enable the next person to learn as much as possible, please do not write anything in the manual itself! Use scratch paper.

I won't expect you to know all the ins and outs of PERT (even if I knew!), but there are some key concepts and terms that I hope you will become familiar with. These include: activity, event, milestone, PERT chart (or network), critical path, dummy activity, estimated earliest time, and latest allowable time.

**To be Handed in (Monday, July 12):**

For either the analysis or implementation stage of the program related to your term problem, develop a PERT-type chart showing the key activities and events and how they relate sequentially to one another. For this exercise, there is no need to put in estimated times unless you care to do so.

### FINAL REPORT FOR YOUR INDIVIDUAL TERM PROBLEM

Now comes the time to bring together your previous hand-in exercises, and thoughts about improvement you've done since then, to prepare a diagnostic think piece about the planning and execution of the action program or research project you have in mind.

What I would like to be handed in is a cohesive, systematic analysis of the objectives and constraints involved, key decisions to be made and the alternative possibilities associated with each, methods and informational needs for evaluating the alternatives (if the best decision isn't obvious), and the steps entailed in implementing one or more of the lines of activity being considered.

Make it clear from whose eyes you are viewing the planning problem. You could assume the role of a consultant who has been asked to come up with a briefing paper on issues and alternatives related to a program proposal as a help to administrators in making decisions about program components and organization. Or you could cast your report as the initial analysis that you could usefully go through, in your mind at least, if you were assigned the job of getting the program underway. Or you could focus on the very process itself of assembling and analyzing information for guiding decisions.

There is no need for your think piece to be lengthy or in fancy prose. In fact, the more efficient you can be in presenting your line of analysis (e.g., using diagrams), the better. Yet, it should be understandable to others and not so sketchy that your ideas are in broad generalities or an incoherent jumble. If you find some of the constructs and devices used in class and in previous exercises helpful (e.g., the awareness-capability-motivation framework, the plus-minus chart, the "slippage" diagram, the decision profile, or the PERT network), fine; but don't feel you have to twist things around to employ these if they don't seem appropriate and/or you have come up with better approaches for viewing things systematically.

If the above suggestions don't seem to fit your particular problem very well, please feel encouraged to see me about ways to adapt your analysis and report appropriately.

### GEOGRAPHICAL ORGANIZATION OF PROGRAMS

#### Core Readings:

Unit K Summary, Geographical Organization of Programs (handout).

Karl A. Fox, A New Strategy for Urban and Rural America (handout). Skim.

Also, you are encouraged to browse through A. T. Mosher's little book, Creating a Progressive Rural Structure, as one of your personal readings (on reserve in the ag. library).

#### Questions for Thought and Discussion:

1. Describe in your own words the basic idea underlying the concept of a "functional economic area." Can you think of some examples of agricultural or rural programs for which FEA's might be appropriate as spatial program units?
2. What other possible bases for delineating spatial program units can be considered?
3. Is your term problem example the sort of activity that lends itself to sub-division into spatial program units? If so, what are the pro's and con's of having only a few large outlets or program areas, as opposed to operating through many local units? What basis for delineating spatial program units would seem to be most appropriate?
4. If the program example you have in mind cannot be implemented everywhere at once, what criterion for expanding the program, either to more spatial program units or within SPU's, would appear to be most appropriate?
5. Does it make sense in your case example to organize the program along geographical lines? Or would it be better instead, or in addition, to evolve and expand the program along categorical lines?

### THE HUMAN ELEMENT

#### Core Readings:

Unit I Summary, The "Human Element" in Getting Programs Going--Legitimation, Motivation, and Leadership (Handout).

#### Questions for Thought and Discussion:

1. Explain and illustrate the concept of "legitimation."
2. Explain and illustrate the concept of "involvement."
3. From your own experience can you cite some examples of reduced program effectiveness that resulted from:
  - a. failure to relate to the motivations and perceptions of key persons or groups?
  - b. poor leadership?
4. In connection with the action or dissemination of information related to your term problem example, is there a need to "legitimate" with key influentials or to "involve" local leadership? If so, whose help would you seek, and how would you utilize them?

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