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DECISION PROTOCOL

VERSION 2.0

DESIGN CYCLE

NOTE:

The Decision Protocol is intended to be a tool to help US Forest Service decision teams work through complex business and environmental decisions. It is an administrative aide that introduces the professional to the principles of decision science, outlines useful steps, and provides sources of information and techniques for improving decision quality. The Protocol is not and should not be viewed as formal Forest Service guidance or policy. Forest Service teams are not required to use the Protocol; its recommendations are not legally binding. Members of the public or other agencies are welcome to participate in Protocol-based projects or use the Protocol or any of its concepts or parts, but their use is strictly voluntary. The Forest Service is not responsible for the consequences of applications or misuse of the Protocol outside the agency.

DESCRIPTION

PURPOSE

* Design a set of alternative actions.

PROCESS

* Design activities to achieve objectives.

* Describe and contact stakeholders who have an interest in these activities.

* Review unacceptable consequences (from Consequence Cycle).

* Refine the designs with modifications, mitigations, and/or adaptive responses.

PRODUCTS

* Description of the alternative actions.

* List of stakeholders.

* Description of rationale for refining alternatives.

* Comparison of alternative actions.

The design process builds a set of prototype alternatives from sets of individual activities. These alternatives attempt to meet the objectives formed in the PROBLEM Cycle and will be evaluated in detail during the CONSEQUENCES Cycle. If you expect any of the alternatives to result in unacceptable consequences, the team cycles back through the DESIGN cycle to refine or replace the activities that are responsible.

Complete the DESIGN cycle for each alternative action. Do not overdesign by adding in so many safeguards, standards, mitigations that the action becomes unworkable or creates additional risks or costs in other components.

If there is already a proposed action, scrutinize it by disassembling it into its activities. Try to understand how well they will meet the objectives and cause unintended consequences.

INITIAL ASSESSMENT QUESTIONS

Put a check beside each statement that is true about any of the alternatives you have developed. For each question unchecked, work through the CORE QUESTION suggested and/or describe what should be done to bring this part of the alternative set "up to grade". If you check fewer than half of the questions, work completely through the DESIGN cycle questions.

_____ The proposed actions and its rationale are clearly described. If not, go to DESIGN Questions 6 and 12.

_____ The range of alternative actions, including the no-action and status quo is complete and balanced? If not, go to DESIGN Questions 6 and 12.

_____ The refinements for the proposed actions and their rationale are clearly described. If not, go to DESIGN Question 8.

_____ The alternatives are creative approaches to achieving multiple objectives and in minimizing adverse consequences? If not, go to DESIGN Questions 4 and 6.

_____ The list of stakeholders who could influence or be interested in the situation is complete. If not, go to DESIGN Question 5.

_____ The actions incorporate or at least have considered the ideas and suggestions of stakeholders. If not, go to DESIGN Questions 3, 5 and 6.

_____ The explanation of how the proposed actions respond to stakeholder concerns is clear, logical, and complete. If not, go to DESIGN Questions 4-6.

_____ The range of adaptive responses for uncertain events are completely and clearly defined. If not, go to DESIGN Question 8.

_____ The proposed actions incorporate multiple strategies to test divergent predictions and guard against risks. If not, go to DESIGN Questions 6 and 12.

_____ Plans for monitoring the activities are feasible and well organized. If not, go to DESIGN Question 9.

_____ The actions fully consider preserving options for future managers. If not, go to DESIGN Questions 10 and 12.

CORE QUESTIONS

ALTERNATIVES ASSESSMENT

(Record the summary of your discussions for questions 1-3 in DESIGN Summary Table 1 following question 3)

DESIGN Question 1. What is the current or status quo management action?

Describe the activities that make up the current or status quo alternative. This will provide a base line against which to compare your design activities and refinements.

DESIGN Question 2. What is the No-Action alternative?

Describe the no-action alternative, if different from the status quo. "No action" could mean:

(a) The organization does not make a decision

(b) Current management continues

(c) Current management stops (i.e., no activity)

(d) Management returns to some former level

(e) Something else.

DESIGN Question 3. What, if any, actions have already been proposed?

Describe any actions that have already been proposed.

DESIGN SUMMARY TABLE -1. Current and proposed action descriptions. (Design Questions 1-3)

Activity Type	Current (status quo) alternative (D-1)	No-action (D-2)	Proposed action (D-3)
Activity type 1:			
Activity type 2:			

ALTERNATIVES DESIGN

DESIGN Question 4. What activities will accomplish the objectives?

An action is composed of a set of activities that address the objectives. For each objective or group of objectives set forth in the PROBLEM cycle, identify activity types that could change the associated measure(s) to the desired value (s).

Define two or more activity options for addressing each objective. These may be different activity types or different levels, strategies, or approaches for the same activity type or modifications to ongoing management activities. If there is already a proposed action, show how the activities that comprise it would align with the measures in the objectives.

Record results in table below and locate activities on a map, if appropriate.

DESIGN SUMMARY TABLE 2 . Activity options (Design Question 4)

	Objective (measure value) 1		Objective (measure value) 2	
	Activity type;	Activity type	Activity type	Activity type
Activity Options				
Option A				
Option B				
Option C				

DESIGN QUESTION 5. What stakeholders --- public groups, organizations, consultative agencies, and others have an interest in these activities?

Identify who would be most concerned about each activity and describe their support, opposition, or neutrality. Consider experiences with similar projects as a guide. Consider stakeholders who:

* Could be directly affected by such an activity.

* Hold attributes of the area or situation, in special, unique, or symbolic value.

* Might campaign to stop the activity.

DESIGN QUESTION 6. What alternative actions (combinations of activities) could accomplish the objectives?

Construct proposed actions - different combinations of activities that could meet the objectives, compromise among competing objectives, and minimize unwanted consequences. These alternatives should be feasible and different enough in expected consequences to offer the deciding officer a reasonable choice. Strive for a relevant set of alternatives, not one "preferred" action stacked against a group of "strawmen" that are infeasible or obviously unacceptable.

Use the DESIGN Summary Table 3 to build the alternatives. Activity types make up the rows; alternative actions the columns. For each column, select one of the options for each activity type from DESIGN Summary Table 2. Combine these actions into actions in DESIGN Summary Table 3. Assign a theme or name to each action to show how it differs

in approach from other actions. Check to see that the combination makes sense and is feasible.

When developing alternatives, consider:

* Objectives - to ensure that the alternatives address the stated objectives.

* Other measures that might be outside acceptable levels (See CONSEQUENCES cycle)

* Stakeholder concerns and public conflicts

* Alternatives suggested by stakeholders that address the stated problems or opportunities.

DESIGN SUMMARY TABLE 3. Alternative designs (DESIGN question 6)

Activity type (from DESIGN Table 2)	Alternative Action A:	Alternative Action B:	Alternative Action C:
	Activity option:	Activity option:	Activity option:
Activity type:			
		Activity option:	Activity option:
Activity type:	Activity option:		

******** SKIP AHEAD AND COMPLETE THE CONSEQUENCES CYCLE FOR EACH ALTERNATIVE. IF UNACCEPTABLE CONSEQUENCES ARE EXPECTED, CONSIDER REFINEMENT OR DROPPING THE ALTERNATIVE FROM FURTHER CONSIDERATION. IF YOU WANT TO REFINE AN ALTERNATIVE, MOVE ON TO THE NEXT SECTION BELOW *********

REFINEMENT

DESIGN Question 7. What activities do you want to refine?

List activities (in Design Summary Table 4 following question 11) that will cause one or more measure values to be unacceptable or raise serious doubts about the alternative's ability to meet the objectives. Also consider activities that are controversial with stakeholders.

DESIGN Question 8. What design refinements could improve the performance of the alternative?

For each activity to be refined, describe modification mitigations, or adaptive responses as refinement options.

Modifications are structural changes in the activity itself. Mitigations are additional activities or standards to forestall or compensate for the activity's effects. Adaptive responses are planned shifts in activity in response to monitoring signals. For each adaptive response, indicate the future event or monitoring signal that would prompt a response, and the range of options future managers may have to deal with these possibilities.

Team members and stakeholders may differ in their recommendations about what action to take because they differ in their interpretation of the problem. Too, there may be great uncertainty about the activity options. If so, consider ways to try multiple activities and test how they work with monitoring cues and adaptive response plans for adjusting them.

List the refinements for each alternative in DESIGN Summary Table 4.

DESIGN Question 9. What monitoring will be needed to implement and test these activities?

Consider:

* What information will reliably determine whether the measure value is outside its acceptable range and whether additional management action is needed to avoid or minimize problems.

* The appropriate scale for this information.

* How often it should be collected.

* What level of precision you require.

* Legal mandates to monitor particular attributes.

DESIGN QUESTION 10. How do the refinements compare on the basis of contribution to objectives, cost, side effects, and other criteria?

For each activity to be refined, compare refinement options. Rate each on a scale of 1 to 10 (0=unacceptable, 10=best) for each of the criteria below.

Consider:

* Objectives -- How well will the refinement improve the action's ability to meet the objectives?

* Side Effects -- How many unintended and unwanted consequences(side effects) could be created by this refinement? What are these effects?

* Cost -- What is the additional cost in dollar equivalents of the effort, materials, supervision, and other resources required? Include expected monitoring and adaptive response costs.

* Stakeholder Opinion -- Will the stakeholders be supportive, opposed, or neutral? Does the refinement raise new concerns? Do stakeholders believe that the refinement will be implemented and monitored effectively?

* Feasibility -- Is the refinement technically, physically, and logistically feasible?

* Managerial Flexibility -- How much flexibility will future managers have to respond to natural or human uncertainties, new information, or unexpected consequences? Can they modify, stop, or switch to another activity if the situation warrants it?

* Funding -- How likely is the funding for this refinement given the current and expected state of the agency's resources?

DESIGN QUESTION 11. Which of the refinements will you include in the final set of alternative actions?

Choose one refinement or a combination of refinements for each activity that meets the criteria in DESIGN Question 10 and will make the action acceptable.

Eliminate refinements that do not modify consequences to acceptable levels.

Describe your rationale for making these selections. Describe why you eliminated the refinements not chosen.

Show this work in DESIGN Summary Table 4.

DESIGN SUMMARY TABLE 4. Alternative refinements (Design Questions 7-11.)

Alternative				
Action:				
Activity	Activity A:		Activity B:	
Refinement Options	Refinement Option A:	Refinement Option B:	Refinement Option A:	Refinement Option B:
Type: (Mitigation, Modification, Adaptive Response)				

Ratings on Criteria

0=unacceptable to 10=best

Objectives				
Side effects				
Stakeholder opinions				
Feasibility				
Managerial flexibility				
Funding availability				

Refinement choices and rationale

Refinement				
selected - Yes/No				
Rationale for selection/non-selection				

ALTERNATIVES COMPARISON

DESIGN Question 12. How do the refined alternative actions, the status quo and the no-action alternatives compare?

Cycle back to DESIGN Question 6 and refine the descriptions of the alternative actions.

Cycle forward to the CONSEQUENCE cycle to modify your predictions or expectations of the consequences of the refined actions. considering performance in meeting objectives, minimization of adverse effects, cost, feasibility, and other criteria.

Display the alternatives and their expected consequences for each objective and side effect measure in DESIGN Summary Table 5 (after question 13).

DESIGN Question 13. How might you combine activities or other features of the alternatives into an action that could outperform those in the existing set?

DESIGN SUMMARY TABLE 5 Alternatives and consequences summary. (Design Questions 12-13 and CONSEQUENCES CYCLE RESULTS)

		Measure values - future consequences			
Measure (CONSEQUENCES CYCLE)	Current Action (if different from No-Action) (D-1)	No action	Alternative A (after refinement)	Alternative B (after refinement)	Combined or hybrid Alternative (D-13)

(D-2) (D-6, D-11) (D-6, D-11)

AUDIT QUESTIONS

RE-CHECK THE INITIAL ASSESSMENT QUESTIONS IN THIS CYCLE. IF YOU ARE UNSATISFIED WITH ANY OF THE ANSWERS, RETURN TO THE APPROPRIATE CORE QUESTIONS OR SUGGEST OTHER IMPROVEMENTS. SEE THE TEAM LEADER TIPS AND TOOLS FOR PROCESS SUGGESTIONS.

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TEAM LEADER TIPS AND TOOLS

Following are some tips and aides for working through selected CORE QUESTIONS in each of the cycles. Not every CORE QUESTION has a tip or tool, but as the Decision Protocol matures and your experience with it grows, we hope to add to the repertoire.

DESIGN CYCLE

Note: There are no tips or tools for DESIGN Questions 1-3, and 4-13.

DESIGN Question 4. What activities will accomplish the objectives?

Have the team brainstorm to explore many possible activities.

* Describe ideal activities that would address each of the objectives.

* What alternative activities would be better at accomplishing the objectives, addressing consequences, public issues, and perspectives?

* How many ways are there of improving the proposed activities? Start with the objective that is least satisfied by the proposal.

* Review the cause-effect chains in the PROBLEM cycle. How might you to intervene in any of these pathways with a new activity?

* What activities might a "fresh" team propose if they saw the information you have developed so far? (You could pose this question to a focus group of stakeholders or another decision team)

* List barriers that would keep activities from being considered. Include barriers such as political risk, status quo inertia, organizational taboos, legal caveats, and traditional norms. Are these barriers really serious enough to block good ideas for action? Purge the barriers or chart ways around or through them, then brainstorm activities under the new "freedom".

FOR FURTHER READING

Bazerman (1986): 77-90. Nonrational escalation of commitment; 112-120 fairness; 123-163 rationality in negotiations.

Dawes (1988): 177-199. Choice strategies and alternative generation.

deBono (1994): 11-34. Alternatives design.

Doyle and Strauss (1982): 230-242. Generating alternatives.

Fisher, Ury, and Patton (1991): 56-80. Inventing options for mutual gain.

Jones (1995): 95-125. Matrix use in alternative design; 227-288 utility trees and structuring adaptive responses. .

Keeney (1992): 198-237. Creating alternatives for single and multiple decision makers.

Kleindorfer et al (1990): 344-383. Societal decision making and alternative development strategies.

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Dawes, Robyn M. 1988. Rational Choice in an Uncertain World. Harcourt Brace Jovanovich, Orlando, Florida. 346 pp.

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Fisher, Roger, William Ury, and Bruce Patton. 1991. Getting to Yes: Negotiating Agreement Without Giving In. 2nd Edition. Penguin Books. New York. 200 p.

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Keeney, R.L. 1992. Value-focused Thinking. Harvard University Press. Cambridge, MA.

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