Planning for the future in outdoor recreation: an economic viewpoint

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Les méthodes de planification qu'emploient les organismes développant la récréation dans la nature sont influencées d'une part par le genre d'organisme en question et, d'autre part, par les caractéristiques de la récréation en plein air. Les organismes ont quatre champs d'action en ce domaine: 1/ les genres de terrains, 2/ l'emplacement de ces derniers, 3/ les systèmes d'aménagement s'y rapportant et 4/ le financement. L'information nécessaire à l'agencement de ces relations comporte: 1/ l'information sur les préférences et habitudes humaines et 2/ l'information concernant les alternatives pouvant augmenter les possibilités de récréation en plein air. La planification idéale ne peut que rarement être obtenue, toutefois, l'enjeu est suffisamment important pour déployer une planification valable, définie avec ce nombre considérable de données qu'elle nécessite.

What are the essential process and decisions in planning for outdoor recreation development? More particularly, what are the planning processes used by public agencies? Such processes are influenced both by the character and circumstances of the planning agency, and also by the characteristics of outdoor recreation which tend to differentiate it from other goods and services. The most important of these characteristics are those which may cause outdoor recreation to approximate a public good, frequent lack of coincidence between benefits and costs, and the fact that benefits and costs are frequently not the same for all recreationists in the same situation.

Planning processes

Outdoor recreation is a production process, and as such, two characteristics stand out. First, the product is the recreation experience rather than a physical product. Second, the consumer, that is the recreationist, assumes a relatively large role as producer. Recreationists, in the aggregate, bring large quantities of capital and labour into the production process. Capital enters in the form of equipment, outlays for travel, etc., while labour is applied through the recreationists' own time, energy and skills.

The recreation agency, on the other hand, participates in the production process largely in providing the site on which the recreation experience is generated, and various facilities and services to enhance the recreation experience. As a production process, this situation is analogous to one in which a firm provides a plant with some basic equipment, to which individuals bring their own raw materials, skill and effort, to manufacture an automobile. Outdoor recreation firms, public or private, generally provide the site on which outdoor recreation is produced and consumed by recreationists. It is

planning for this component of the outdoor recreation production process with which we are concerned.

Public agencies and private firms involved in outdoor recreation development have both important similarities and interesting differences. Both presumably attempt to maximize benefits to the owners of the resource, be they the public-at-large or a few individuals. This frequently involves planning in order to provide opportunity for more use, and/or higher quality use, of a given resource. Both also tend to "satisfice" rather than actually "maximize" — in short, they follow courses of action that are "good enough" in some relevant sense rather than courses of action that would be absolutely the "best" if the time and trouble necessary for unlimited analysis were available (Cyert and Marsh 1956).

They may differ in the manner in which benefits and costs are measured. Private firms characteristically measure benefits in terms of net monetary revenue. This convenient measure is usually not available to the public agency which commonly provides an unpriced service, or a service the cost of which is partially subsidized. Public agencies are therefore forced to take a broader — hence less neatly specified — view of benefits. They may also take a broader view of costs, including in their calculations costs borne by others which private firms might ignore as being external to their operations. In brief, the goal of public agencies is commonly to meet criteria of quantity and/or quality which are set by the community-at-large, and by the responsible legislative body.

A public agency providing outdoor recreation opportunities operates at two levels in carrying out this mission (Figure 1). First, it appraises the apparent need for various outdoor recreation opportunities, and identifies and evaluates alternative means of meeting such needs. On the basis of this analysis, priorities are established and recommendations are presented to the appropriate funding body, e.g., in the case of a provincial agency, the Treasury Board and thence to the provincial legislature. It should be noted that the planning agency performs a most significant decision-making function in selecting and ranking projects, but final decisions as to what will or will not be done generally lie in the hands of the appropriations authority. The function of resource allocation which is achieved through market processes in the private sector is accomplished through legislative authority.

At the second level, once specific projects have been approved and funded, it becomes the re-

Fig. 1. Diagrammatic representation of the recreation planning process in a public agency.

sponsibility of the agency to execute these projects. The agency may have some degree of latitude in the development of new projects as well as in the operation of existing programs. However, it is in the planning of new projects that the public agency has its major opportunity to expand outdoor recreation capacity.

In the planning stage, public agencies have four major areas of concern. Each involves identification of feasible alternatives, and thorough evaluation of the relative merits of each alternative. Obviously, a clear statement of the agency's specific objectives is necessary before such evaluation can be meaningfully carried out. Points requiring consideration are:

- a Alternative kinds of sites: evaluation of a wide variety of recreation areas ranging from high-density multiple-purpose parks to relatively undeveloped natural areas.
- b Alternative locations for new investments: consideration of the relative advantage of expanding outdoor recreation opportunities close to concentrations of population, as compared with physically more desirable sites which are less accessible to users.
- c Alternative management systems for new or existing recreation areas: evaluation of the relationship between the intensity of management and the specific management practices applied and the capacity of outdoor recreation areas is required.
- d Alternative institutional arrangements for providing and financing outdoor recreation opportunities: consideration of the relative role to be played by various levels of government and the private sector; the degree to which costs will be borne by users through entrance or other fees also warrants consideration.

The foregoing are interdependent areas of concern. The level of investment, while generally outside

the province of the public recreation planning agency, affects each area.

Outdoor recreation planning involves comparison of feasible alternatives for increasing outdoor recreation activity. For each alternative, an estimate can be made of the increase in recreation activity anticipated through such development, and its cost. The amount of activity is influenced by such factors as location with reference to population, socioeconomic characteristics of that population, the nature of the facilities provided, the attractiveness of the area, and the availability of the opportunities for outdoor recreation.

In addition to estimating the increase in outdoor recreation activity for each alternative, effective planning requires an estimate of the cost incurred. Both the initial outlays involved in acquisition and development and the capitalized value of the operating expense associated with a new area or facility must be taken into account. There are also more subtle costs such as a possible reduction in the local tax base which would accompany acquisition or expansion of a public outdoor recreation area. Such costs are difficult to estimate accurately. To the extent that they can be accurately estimated, they should, presumably be added to direct costs. In cases where they cannot be accurately estimated, they can be brought into decisions more indirectly. For example, two alternative locations for a particular kind of recreation facility might involve approximately the same expected use levels and direct costs, and reasonably clear (though imprecise) indications that local tax base would be reduced considerably more in one location than the other. After making sure that use levels and direct costs really will be the same, an agency could very appropriately select the location with less reduction in the local tax base.

With estimates of the amount of activity anticipated through each of the alternatives and corre-

sponding estimates of the cost, the planning agency is in a position to develop an activity/cost ratio³ for each alternative. By ranking the alternatives in order of decreasing activity/cost ratios and assigning project costs to each, the agency may determine that combination of alternatives which may be undertaken with available funds and which will provide facilities for the greatest increase in outdoor recreation activity. Alternatives with the lowest activity/cost ratio will be excluded. In considering various proposals for expanding facilities for a particular activity, this approach provides the planning agency with a guide to selecting those alternatives which are most productive.

The more limited the funds available in a given budget period, the more restricted the number of alternatives to be included in an agency's program for that period. Such an approach, however, results in a relatively high degree of effectiveness with respect to the use of available resources.

A valid objection to this approach is that it, in effect, attaches equal significance to each unit of outdoor recreation activity. The product of the agency concerned with providing opportunities for outdoor recreation is the enjoyment realized by people through their varied outdoor recreation experiences. It is this satisfaction that the agency is attempting to maximize with the resources at its disposal. A man-hour picnicking is not necessarily equivalent to a man-hour fishing in terms of the satisfaction derived. The satisfaction realized camping in one environment could be quite different from that which would accrue in another environment. This suggests that a qualitative factor be introduced into the calculations on which planning is based.

Consideration of the qualitative aspect of each alternative would take into account several factors, some of which are common to the quantitative element as well. The kinds of activities appropriate to the area, the character of facilities, the aesthetic attributes of the environment, the presence of points of natural or cultural interest and the crowding or interactions among users are some of the factors which affect the quality of the experience enjoyed by the recreationist. Specific methods for systematically measuring each of these elements are needed, but progress is being made in development of such measures. For example, Shafer and his associates are presently developing measures of aesthetic attractiveness (Shafer *et al.* 1959, Shafer and Mietz 1970).

Multiplied by an appropriate qualitative term, the anticipated amount of activity for a specific alternative would provide an approximation of the amount of satisfaction to be derived from that development. When the product is divided by the corresponding cost, the resulting ratio provides an indication of the amount of satisfaction anticipated per dollar of cost. Again, the ratios for various alternatives would be arrayed in diminishing order, and the planning agency would have a basis for selecting

the most productive alternatives, given a limited budget. It should be noted that the qualitative factor developed is a relative term and not an absolute quantification of enjoyment.

Several comments regarding the implications of this approach to outdoor recreation planning are in order. One is that it obviously does not assure satisfaction of the total outdoor recreation demand. It could very well lead to decisions such that expansion of outdoor recreation opportunities in certain geographic areas, or for certain kinds of activities, would be negligible or totally excluded. This would simply reflect that the magnitude of anticipated enjoyment relative to costs is low as compared with other alternatives.

A qualitative factor could be utilized to recognize other significant considerations in outdoor recreation planning. It would, for example, permit weight to be attached to the outdoor recreation needs of minority or disadvantaged groups. In some situations, facilities readily accessible to urban populations by means of public transportation might be more highly evaluated. Facilities adapted for use by handicapped persons could be similarly treated. Such treatment would reflect the fact that the marginal utility of appropriate recreation opportunities made available to these segments of the public may be appreciably greater than for the community-at-large. The qualitative factor would also permit recognition of minority interests in specific outdoor recreation activities.

Specific methods for recognizing these considerations present difficult problems. They concern particularly the point in the planning process at which it is appropriate to introduce weights favouring the needs of minority or disadvantaged groups. Mack and Myer (1964) have developed a quite ingenious procedure which calls for introducing them quite early in the process, before estimates of use level have been developed. Davis and Bentley (1967) take issue, arguing that weights favouring needs of particular groups should be introduced only after estimates of use levels for those groups have been completed. Their essential point is that estimates of use levels are (or should be) facts to be determined by technical analysts, while weights attached to needs of particular groups are values to be assigned by policy-makers. They argue cogently that, while both are important, it is helpful to carefully distinguish between facts and values — and that this can be best done if weights are introduced after use levels have been estimated.

Another point is that the planning processes we are discussing are short-term approaches, resting on the assumption of a fixed amount of funds. The budget period may be the appropriate time span with respect to the availability of funds. In the longer term, the planning agency may well be in a position to influence the amount of funds and the level of investment.

Frequently, a particular project will not reach full development and use for several budget periods. In such instances, the project should be accepted or rejected on the basis of the anticipated develop-

³This would be the added recreation days created by the alternative divided by its cost. This is in fact quite similar to a benefit/cost ratio.

ment and use. That is, the ratio used in evaluating this alternative should be based on anticipated satisfaction in relation to the total relevant cost, and allocation for a given period based on requirements for that period, taking into account the rate of development and potential use during successive periods of development.

Recreation planning should recognize the possibility of complementary developments. The development of a recreation site by one agency may foster development by another agency or by a private firm. Often such response can be anticipated quite clearly. Where this occurs, the expansion of outdoor recreation opportunities is amplified. Such an effect should be taken into account in planning. Furthermore, certain agencies are in a position to effectively coordinate prospective development by other agencies and private firms.

Institutional restraints may affect the planning process. Allocation of funds to capital improvements and operating expense, or the earmarking of funds for specific projects may tend to reduce the flexibility of the planning agency. Another constraint could be found in the extreme fractionalization of responsibility for recreation in many jurisdictions. For example in the federal government, well over 20 separate agencies have recreation responsibilities. Restraints of both these kinds limit the number and variety of investment patterns which may be considered. In particular instances, they may eliminate the most productive patterns.

Information needs

The basis for the planning process undertaken by outdoor recreation agencies, and subsequent decisions, lies in information concerning the variables involved in planning. Effective decisions and efficient use of the resources available to expand outdoor recreation opportunities depend to a large extent upon the information at hand. In the absence of sound and adequate information, decisions tend to arise from subjective evaluations and in response to pressure.

The planning process we have outlined requires two categories of information. The first is information relating to human preferences and use, or demand for outdoor recreation opportunities. The second category involves the physical possibilities for enhancing outdoor recreation opportunities and associated costs.

Information concerning human preference and use is essential to establishing appropriate priorities in planning, development and managing public outdoor recreation facilities. Several types of information are necessary in this regard:

- a Socio-economic characteristics of potential users: population of the relevant region and its distribution geographically and by age; income, available leisure time; education; occupation.
- b Kinds of activity preferred and intensity of preference: preferences tend to be related to past experience and to skills and capacity of the recreationist. Thus, in what activities would people

like to participate if the facilities were available?

- c Cost to users: cost of equipment, travel and related costs; charges for use of facilities; cost in terms of time.
- d Characteristics of recreation sites and facilities from the viewpoint of potential users: points of interest and aesthetic attributes of the area; design of facilities; intensity of use; diversification of activities; management of area.

To be useful for the purposes of evaluating specific projects (for either new areas or new developments on existing areas) human preference and use information must be available in a form which is applicable. National, regional or provincial estimates of participation in outdoor recreation activity may provide some indication of the direction and magnitude of change, but require judicious adaptation in the case of specific developments. Planners should be particularly alert to changes in the technology of outdoor recreation equipment as well as changes in preferences. They should also be alert to possible changes in use patterns when facilities of types not previously available are introduced in a particular locality (e.g., artificial lakes). Systematic study of intensity of preferences for particular activities would seem to offer some promise of improved ability to foresee the extent of such changes in use-patterns to a reasonable degree.

With respect to the physical means of expanding outdoor recreation opportunities, information from the viewpoint of planning agencies is required concerning:

- a Potential sites for outdoor recreation development.
- b Developments required for various kinds of activity.
- c Design of facilities and the effect on cost, durability, capacity and use.
- d Means of improving aesthetic characteristics.
- e Carrying capacity.
- f management techniques to expand capacity or enhance quality.

For planning purposes, information is also needed concerning the cost of measures designed to expand outdoor recreation opportunities.

As in the case of human preference and use information, it is essential that supply information lend itself to specific development situations. Planning agencies themselves, through accumulated experience, generally have ready access to information regarding alternative means of expanding outdoor recreation opportunities and related costs. There is, however, a substantial need for additional information concerning the design and management techniques appropriate to recreation areas. For example, management of vegetation to increase the capacity of recreation sites while simultaneously maintaining or improving their aesthetic quality has been studied on a relatively small scale in particular locations. However, more broadly developed and widely applicable methods for assessing both current capacity and alternative methods for increasing capacity are badly needed.

Conclusions

We have outlined planning processes for outdoor recreation development in relatively brief form. The processes discussed are based on concepts related to effective investment of funds available for outdoor recreation development. In essence, they involve development and comparison of "activity/cost ratios" for alternative kinds of facilities, in alternative locations, with alternative management systems and alternative administrative and financial arrangements. To be fully useful, such "activity/cost ratios" must take account of both quantity and quality associated with particular kinds of activities and facilities. They must also include essentially all the costs associated with alternative patterns of development.

Needless to say, this is an ideal that can only be approached, seldom if ever completely achieved. Similarly, there are difficulties caused by lack of coincidence of the benefits and costs of development, failure of benefits and costs to be the same for all recreationists, and the nature of outdoor recreation as a quasi public good in many instances.

These difficulties make the provision of adequate predecision data essential. Inadequate data may result in the making of faulty decisions, and hence in inadequate planning. In the face of the vastly increased requirements for outdoor recreation facil-

ities and services projected for the future, such inadequate planning could be disastrous for the agencies involved as well as for the recreation public.

It should be emphasized that the planning processes outlined here, and their associated data requirements, are not the only way in which planning can proceed. They do represent, however, one rational approach to a growing and complex problem for public agencies, and also in part, for private firms. We hope that, at the very least, this paper will induce some thoughtful discussion of how and where to proceed with an important task.

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