

INTEGRATED RIVER BASIN DEVELOPMENT AND REGIONAL PLANNING IN NEW ZEALAND

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ABSTRACT

The importance of thorough and extensive regional planning is illustrated by a general discussion. A method of comprehensive planning of regional water and soil resources, called integrated river basin development, is outlined. The information required for this method is basic to any sound regional planning. Finally, the present administrative structure and the proposed Local Government Act are commented on from a regional planning point of view.

INTRODUCTION

The fundamental reason for regional planning is control of regional resources. Proper control of regional resources requires comprehensive regional planning. Such planning is becoming increasingly necessary; its scope is large enough to be called innovatory.

Consider the quality and comprehensiveness of the planning that goes towards constructing, equipping, staffing and running a new hospital, and compare it with the comprehensiveness of our regional planning. There is little comparison, partly because present regional planning legislation is not extensive enough – a reflection that regional planning is regarded as a luxury item, to come later, after development.

Regional planning cannot be achieved piecemeal at the local level, where only individual interests are considered. For example, several groups in Nelson have expressed differing and sometimes competitive views as to the value and uses of the Waimea Estuary. These include reclamation (an Act of Parliament authorizes this), effluent disposal, recreation, and the creation of wildlife refuge. What are the values of the estuary; what should its future be? How

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much information did the people who drew up the reclamation Bill, and those who made it law, have concerning estuaries? Probably precious little. This estuary – and others such as the Invercargill one – needs to be viewed as a regional resource and managed accordingly. To do this, one has to get above the parish pump, to an ‘eye of God’ position. The sort of body suitable for this is a regional governing authority, and this would be an appropriate body to draw up Bills for Parliament.

The microbiological standards specified in the Waters Classification Schedules are another example of legislation drawn up by people who were not knowledgeable enough in the field. Local microbiologists were not consulted, and although the resultant standards convey the spirit of the law, they cannot enforce it.

There is no doubt that in New Zealand there is a growing need for planning in more and more of our resource-using activities, because of impending scarcity. The management of a single resource may be a relatively simple matter, but when properly considered as to its impact throughout the region it can become an exceedingly complex matter, involving economic, political and social considerations. Thus the regional planning body has to assimilate an enormous amount of information of all types, both quantitative and non-quantitative – a task more far-reaching than planning the new hospital. It will be expensive too. Responsible regional planning must go so far as to comment on the people resource, giving the desirable sizes of its cities, and desirable regional population. This is real planning for the future. We must look at the whole regional picture.

A problem with regional planning at present is the lack of communication between bodies having powers over resources within the region. There is a need for establishing a regional body with statutory powers of planning. In an age of specialization, we find it hard to bring knowledge to one point for consideration.

In his book *Operating Manual for Spaceship Earth* Buckminster Fuller, an imaginative and comprehensive thinker, has said: “I feel that one of the reasons why we are struggling inadequately today is that we reckon our costs on too shortsighted a basis and are later overwhelmed with the unexpected costs brought about by our shortsightedness. Of course, our failures are a consequence of many factors, but possibly one of the most important is the fact that society operates on the theory that specialization is the key to success, not realizing that specialization precludes comprehensive thinking. This means that potentially integrable advantages accruing to society from the myriad specializations are not comprehended

integrably and are therefore not realized." This is surely the case with our present regional planning set-up.

INTEGRATED RIVER BASIN DEVELOPMENT

A comprehensive water resources planning method is evolving in the ECAFE agency of the United Nations at present. This is a multiple-objective method and could be used as the springboard for regional planning in New Zealand. The basic planning unit is the river basin, or group of adjacent river basins, large enough to constitute a region. There are several ways of defining a region; for example, one can look at the largest commercial centre and trading patterns. By examining the boundary changes to territorial authorities recommended by recent rounds of the Local Government Commission, it appears that the 20 regional water board regions already in existence are likely to be governed regionally in the near future. There are worse alternatives than this – in fact it may prove hard to do better, since catchment authorities have a good history of involvement in the regional management of the soil and water resources.

The multiple-objective planning method stems from traditional water resource planning where the one objective was economic efficiency (as distinct from the various aims of development, such as irrigation, hydro-electric power generation, or flood control). The term 'objective' arises from assumed planning and accounting points of view, such as the regional and national viewpoints. Nowadays, largely because of changing public values which have drawn attention to the effects of any development on the rest of the community, there is a range of objectives to be considered at the planning stage. The important point about multiple-objective planning is that several plans are formulated and brought to a final design stage. Each plan emphasizes one particular objective. The various alternatives are compared and a final design eventually decided upon. In this way more information than usual can be brought through to the final plan stage, and the various components – quantitative and non-quantitative – can be compared and 'traded off' against each other.

Objectives which have been currently used in what is called integrated river basin development are:

- (1) national economic development;
- (2) regional development;
- (3) environmental quality;
- (4) quality of life, or social wellbeing.

These are early days in laying out methodologies for multiple-objective planning. There are many problems, such as cost allocation among beneficiaries, and selection of discount rates. The principle, however, appears to offer an answer to the need for comprehensive planning.

Another difficulty is the setting out of methods and definition of the various elements or components to be considered under each objective. An ECAFE publication* listed the following components under the 'regional development' objective:

Monetary effects –

Benefits: Irrigation; flood control; power; fish and wildlife; recreation; wildlife refuge; externalities (secondary benefits); employment benefits – construction, operation and maintenance.

Costs: Capital repayment; operation and maintenance; regional tax contribution; loss of unemployment payments.

Descriptive effects –

Benefits: Employment during construction; employment for operation and maintenance (e.g. x jobs, for y years).

Components of the 'environmental quality' objective are difficult to quantify. The basis of this objective is to provide a physically and mentally healthy environment as measured by environmental characteristics which can "be understood by reasonable men". It is a subjective but very important matter. A large amount of research is being done at present on methods of measuring environmental characteristics. New Zealand has adopted an information matrix for assessing environmental impact; the U.S. Bureau of Reclamation has produced a descriptor method, part of which is as follows:

Class: Areas of national beauty and human enjoyment.

Categories: Open and green space; natural and scenic rivers; lakes; beaches and shores; etc.

Class: Biological, geological and ecological elements.

Categories: Biological resources, flora and fauna; geological resources, etc.

Class and Category: Irreversibility.

Class and Category: Uniqueness.

Each category, except irreversibility and uniqueness, is numerically evaluated for quality, quantity and human influence. The usefulness of the method lies in its simple presentation of data to aid decision making.

* *Multiple-Objective Planning in the Development of Water Resources and Its Ramifications with Respect to Implementation*. Regional Conference on Water Resources Development, 10th Session, Manila, 1972.

Components of the 'quality of life' objective are also difficult to define. The sort of parameters looked at include:

- (1) Standard-of-living information; income distribution; weekly hours worked.
 - (2) Study of various groups – pensioners, youth, etc.
 - (3) Distribution of skills; educational levels.
 - (4) Other factors relevant to human welfare – recreational facilities, sociological studies such as community involvement, etc.
- The expected social impact of any plan can be measured by a type of with/without analysis.

THE LOCAL GOVERNMENT BILL

It should be clear that planning of this sort will require a multidisciplinary team of specialists at the regional government level, being serviced by people working in the various fields such as those at present employed in government departments and local authorities. In the light of this, the question can be asked: how conducive to comprehensive planning is the present legislation and the Local Government Bill? This Bill, to be considered during the 1974 session, provides for the repeal of the Local Government Act 1967 and the establishment of a stronger Local Government Commission with powers to set up either regional or united councils to undertake the functions of local authorities that are not territorial authorities. These councils will also assume some of the functions at present carried out by territorial authorities, as the commission sees fit. Both councils would be responsible for regional planning and civil defence, and have the power to create regional roads.

A united council consists of members appointed by the constituent territorial authorities within the region. It will be administered by one territorial authority, and will not be able to levy a rate; net expenditure will be met by the constituent territorial authorities. The question immediately arises: who will be in control – the united council or the servicing territorial authority? A united council is a cheap measure aiming to use existing administrative services. A similar elective structure operates with the five catchment commissions, which have suffered through parochial attitudes on the part of their members. Similar problems could be expected under a united council. In addition, the all-important regional planning function may not be well realized if there is any local reluctance to employ specialist staff over and above the existing staff.

Regional councils appear to be a more promising proposition. Members will be elected on a population basis. Provision is made

for the maintenance of public offices, and to levy rates. This gives a more independent nature than a united council – and independence is essential for strong regional government. A comment by the Minister of Internal Affairs indicated that only major metropolitan areas would have regional councils – that is, Wellington, Christchurch and Auckland. Most catchment-authority activity occurs outside metropolitan areas, and would therefore be mainly under united councils, although there is a suggestion that some local authorities could remain and function independently. This is bad news for comprehensive regional planning, but probably better news for soil and water management. In general, a united council would be undesirable. The legislation for it lacks firmness, is a short-cut measure, and is devoid of any imagination. It represents a proliferation of local government rather than the establishment of regional government, and a lack of appreciation of the importance of regional planning.

Under existing law there are several anomalies – brought about largely by the proliferation of legislation – involving government departments and local authorities. In the soil and water field there are many examples, such as the N.Z. Forest Service having statutory powers to provide for the co-ordination of local authorities. Also, the hydrological functions of the Ministry of Works and regional water boards are often duplicated – the question of who does what with community irrigation schemes is still a muddy example. The policy of the previous government toward community-type irrigation schemes was that planning, construction and administration were to be co-ordinated by the local territorial (county) authority. In the normal run of events, this meant that the Ministry of Agriculture and Fisheries and the Ministry of Works would become involved in at least the design checking work. Financial aspects of such a project would probably be examined by the Agricultural Economics Division of the Ministry of Agriculture and Fisheries, whilst the final seal of approval, necessary for subsidy purposes, would be given by the Water and Soil Division of the Ministry of Works. All this involves many organizations, and is time consuming, cumbersome and inefficient in terms of making decisions. However, it does ensure that both national and local interests get a fair hearing. Present government policy favours giving the planning, construction and administration functions entirely to the Ministry of Works.

The Local Government Bill does not deal with the proposed relationship between government departments and regional and united councils, yet these are intimately related to regional govern-

ment. By not defining the proposed relationship between government departments and regional and united councils, the entire Bill flaunts an aura of a 'first attempt only'.

The national-level type of specialist authorities will be required for regional government, although some streamlining of functions will be necessary. For example, the National Water and Soil Conservation Authority, with its two policy-forming councils (the Soil Conservation and Rivers Control Council and the Water Resources Council) could function in a similar manner to the present. Other national-level authorities will have to adopt a less overseeing but more guiding capacity than at present. It is expected that much of the expertise required for integrated planning would be found within the structure of the regional-government authorities.

The recommendations in the Dunford report*, that the research programme of the Water and Soil Division of the Ministry of Works be orientated to regional problem zones, and that the Division pursue a role of co-ordination and support for regional water board activities, are timely. New Zealand cannot afford duplication of facilities for data collection and evaluation, and the expertise of government departments will unquestionably be required for regional planning. Above all, the need for comprehensive planning must be realized and legislatively provided for now.

* *Water and Soil Conservation Research in New Zealand. A Report to the Minister of Works and Development by E. G. Dunford, 1973.*