

CHAPTER 4

**THE ORGANIZATIONAL
STRUCTURE
OF
SCIENCE AND TECHNOLOGY
POLICY-MAKING**

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In the previous chapter, Forsyth argued that policy-makers must first consider a proper structure for science and technology policy-making, and planning. Chapter 4 presents a number of ideas on national structure for science and technology policy-making. The first of three articles, based on the work of Omar Rahman, explains the functions and structure of a science policy organization.

The second piece, by Fortunato de la Pena, introduces the National Science and Technology Authority of the Philippines. It also shows the functional linkages between this unit and national development planning processes, regional science coordinating units and research and development institutions throughout the country. It is offered here as one exemplary model of a workable science and technology policy infrastructure.

The last article in this chapter, by Ratna S.J.B. Rana, focuses on Nepal's efforts to bring science and technology to bear on development problems. It is a particularly interesting piece because it commences with an expression of development needs, and logically progresses to a discussion of the role, functions and structure of a science and technology organization to focus on those needs.

Like the Forsyth article in chapter 3, the Rana piece in this chapter is only half of a larger article. The balance, dealing with policy decision criteria, appears in Chapter 5.

Chapter 4 is designed to help readers assess current science and technology organizations in their own countries. Many of the principles of organizing for effective policy-making can be culled from the articles included in this chapter. By the conclusion of this chapter it will be possible for readers to answer the following

six fundamental questions about organizing for science and technology policy-making:

1. Outline three principle functions of a science policy organization.
2. Define the nature and activities of a variety of national science policy organizations.
3. Identify the elements of a national science and technology policy. Explain their relationship to the role of a national science policy organization.
4. Propose mechanisms by which a national science policy organization can integrate national science planning with national development planning.
5. Explain how a national science policy organization can connect with regional research organizations.
6. Outline the steps needed to determine the structural requirements for a national science and technology policy organization.

The following seven questions are offered as a basis for readers to consider how to apply these principles to their own country policy structures. They may be most usefully applied in small-group discussions:

1. Explain Rahman's four functions of a science policy organization: decision-making, planning, monitoring and coordinating and implementation. How are these activities carried out in your country at the present time?
2. Does your country have a separate national science and technology plan? If so, what are its elements? How was it produced? If not, how are national priorities for science and technology determined and communicated to the scientific community?

3. How are your country's science and technology objectives tied to national development goals? What is the organizational framework for science and technology policy-making in your country?
4. How does it relate to the Ronayne "systems" described by Rahman: pluralist system, coordinated system, concerted system, and centralist system?
5. Describe some of the conflicts you have seen in your country between science and technology planning decisions, and implementation procedures.
6. How were these conflicts handled in your country? How can a national science and technology policy organization help reduce these kinds of conflicts?
7. What does de la Pena mean by the "demand-pull" or "supply-push" strategies in science and technology policy-making? How does your country currently operate?