

**CHAPTER 3**

**SCIENCE AND TECHNOLOGY  
POLICY-MAKING**

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Chapter 2 outlined Asia's long history of science and technology. Further, it introduced some fundamental ideas about the role of science and technology policy-makers in stimulating science and technology for development.

Now, Chapter 3 focuses fully on the definition and role of science and technology policy. Two contributors, Olivia Caoili and David Forsyth, provide complementary articles.

**Olivia Caoili** offers working definitions of "science", "technology", and "science policy." Further, she outlines the kinds of questions with which science and technology policy-makers should be dealing. She reinforces the significance of their role in national development with the assertion that,

The progress of a country depends on its capacity to identify, resolve and decide upon the scientific and technical problems which confront it at successive stages of economic and social development....

Caoili's contribution relates well to those in Chapter 2, insofar as she commences with a historical overview. She weaves into her logic the contributions of a number of other science policy experts.

**David Forsyth's** short paper is really the first third of a larger analysis of science policy in Fiji. In it he presents a basic model for science and technology policy-making. Its components are organizational structure for policy-making, policy decision criteria, and technology assessment. Defined in this Chapter, these three elements provide the basis for organizing the balance of this compendium of Asian readings on science and technology policy. The Fiji experience with science policy analysis is presented later in the compendium with the balance of Forsyth's text (Chapter 6).

Chapter 3, finally, focuses on the principle elements in "science and technology policy." It is important for the reader to comprehend them before proceeding to subsequent chapters. Therefore, it would be helpful for the reader to approach this chapter with a view to finding ways of dealing with the following six problems:

1. Define "science."
2. Define "technology."
3. Define "science and technology policy."
4. Exemplify the kinds of questions with which science and technology policy-makers must deal.
5. Explain why science and technology policy is needed for national economic and social development.
6. Identify and explain three basic elements, or components, of a comprehensive science and technology policy.

One of the issues which divides members of the S&T community is the role of basic science in development. One of the arguments carried by contributors to this chapter is the fundamental role basic science plays in creating the kinds of people who are capable of managing both science and technology for development purposes. Another issue of paramount importance to this book is the role and nature of S&T policy, *per se*. Both these issues are treated in Chapter 3.

One way of building comprehension of these issues from the articles is to engage readers in discussions of the following nine questions:

1. How do "science" and "technology" differ? How are they complementary?
2. What is the rationale for getting government policy-makers involved in science and technology?

3. What did Caoili mean when she said that, "...developing countries must build up their own scientific and technological capability as tools for socioeconomic development and genuine national independence?"
4. What are "science and technology policy instruments?" Give an example of one from your own country.
5. What are "explicit" science and technology policy instruments? Give an example from your own country.
6. What are "implicit" science and technology policy instruments? Give an example from your own country.
7. What kinds of organizational structures are needed to promulgate national science and technology policy?
8. What kinds of criteria should policy-makers use in determining science and technology priorities? Where do those criteria come from?
9. What is technology assessment? How is it useful in the development of science and technology policy ?