

CHAPTER 1

**SCIENCE AND SOCIETY:
THEIR RELATIONSHIP**

CHAPTER 1:

SCIENCE AND SOCIETY: THEIR RELATIONSHIP

Chapter 1 characterizes the inseparable linkages between science and society. It is a foundation for our ultimate consideration of the role of science and technology (S&T) in development.

The chapter presents two articles. The first, by Aqueil Ahmad, looks at the pervasive links between science and society. Ahmad asserts that society cannot transform itself without improving the quality of its knowledge and skill (science and technology). He also reverses this generalization, saying that science and technology cannot evolve without commensurate changes in society and culture.

The second article, by Giancarlo Quaranta, reinforces Ahmad's ideas. But Quaranta adds the important conclusion that technological problems cannot be solved by technical or economic models alone. Rather, their holistic relationship with individual and social behavior requires that development specialists also account for the "sociological nature of the technical problem."

This chapter presents concepts which will help the reader deal with four elements of the relationship between science and society. By the end of the chapter the reader should have sufficient understanding of the relationship between science and society to participate in a stimulating discussion of the following topics:

1. Discuss real social and cultural impacts of technological innovations in the reader's own country.
2. Explain the occasional failure of technological innovations in terms of unanticipated social or cultural factors.
3. Identify some of the language barriers to transformation of technology from Western to non-Western cultures.

4. Explain the impact of stages-of-development (in a culture) on choice, development and adoption of technologies.

This chapter is designed to lay the groundwork for subsequent discussions of science and technology policy. Hence it provides a primer on the role of science in society. Some readers may wish to know how the two articles, included here, relate to this topic, and each other. Others may wish to know what key ideas to look for in reading this material. The following seven study questions will guide readers through these articles. Workshop or seminar instructors may wish to use the questions for group discussion following individual study of the articles:

1. Explain Ahmad's phrase, "The phenomenon of cultural lag, whereby scientific-technical change outstrips socio-cultural change..."?
2. Give some examples of such "cultural lag" from your own development experience, in your own country, or in another.
3. Why does Ahmad argue that "...human progress is possible only when these two processes of change--scientific-technical and socio-cultural--are synchronic and symbiotic?"
4. Quaranta says, "Experiences of development cooperation...have shown that merely technical and economic approaches to development often produce effects which are the antithesis of those hoped for." Give an example of this point from his paper. Give some examples from your own experience.
5. Why does Ahmad say, "...Asian societies...will have to make necessary cultural and psychological adjustments if they choose to critically absorb and rightly benefit from Western (scientific and technological) experience?" How far does this generalization apply to the transfer of technologies between two non-Western cultures?
6. Quaranta asserts that introducing new technology without "...taking into account the sociological nature of the problem..." can cause resistance to

the technology, or even expulsion of it. Explain what he means and cite an example from your experience in development.

7. How do these two articles, relate to each other? What themes do they have in common? Are there any differences of opinion between the two scholars? How do their points-of-view compare with yours?