**CHAPTER SIX**

**SCIENCE, SCIENTISTS AND ENVIRONMENTAL PROBLEM**

**7.4. Science and environmental policy-making**

In order for a scientific issue to become policy it must be translated into something that is‘treatable’. As a result, at the policy formulation stage the contribution of natural scientistsusually diminishes while the role of socioeconomic and technical experts grows. For example,Liberatore (1992) found that while natural science findings still played an importantrole in the international debate on global warming in the early 1990s, it was the input ofeconomists, policy analysts and energy technology experts that was crucial in shaping thenature of the European Community response.

**7.5**. **Scientific roles in environmental problem-solving**

Susskind (1994) has proposed five primary ‘roles’ which are played by scientific advisers in the environmental policy-making process: trend spotters, theory builders, theory testers, science communicators and applied policy analysts. These roles frequently overlap but each has its own tasks and agendas.

*Trend spotters* are scientists who are the first to detect changes in ecological patterns and to understand their significance correctly. Occasionally, the trend spotter may be a lone scientist who observes some important pattern in the micro-ecology of the pond or marsh and is able to extrapolate this onto the larger environmental canvas. More common, however, are trend spotters who are part of a scientific team that is engaged in gathering and analyzing longitudinal data such as that assembled from the LANDSAT satellite or from the European Air Chemistry Network.

*Theory builders* try to explain the causes for the changes that the trend spotters identify. They are inclined to engage in model building, both to fit explanations to past circumstances and to predict future effects.

*Theory testers* critically scrutinize the models suggested by theory builders. Using pilot tests or controlled experiments, they attempt to ascertain whether the hypotheses and propositions generated by the model can be empirically proven.

*Science communicators* attempt to translate difficult-to-decipher data into terms that the public at large can understand. They are key players in the ‘coming out’ process that was discussed in an earlier section of this chapter. Some communicators such as Edward Wilson are eminent scientists who feel a strong moral responsibility to bring the fruits of their research to the public. Others, for example, the Canadian geneticist and broadcaster David Suzuki, are researchers who have made a conscious decision to spend their life popularizing science and carrying the ecological message to a wider audience.

*Applied policy analysts* act as consultants to political decision-makers, converting scientific findings into policy recommendations. They play a prominent role in the formulation of environmental treaties because they take what is often abstract scientific information and recast it in terms that are amenable to legislation or to international agreements.

Each of the five types of scientists may contribute throughout the environmental problem-solving process but there is a considerable degree of specialization; that is, trend spotters and theory testers are usually more prominent during the fact-finding stages while science communicators and policy analysts play key roles during the negotiation/bargaining period (Susskind 1994: 77). In terms of the three key tasks in constructing environmental problems discussed in Chapter 5, trend spotters and theory testers can be said to characterize the ‘assembling’ process, communicators in ‘presenting’ an issue and applied policy analysts in ‘contesting’ an environmental claim.