CHAPTER 37
MULTIPLE STRESSORS AND THE LEGAL CHALLENGE

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**Abstract:** The purpose of this chapter is to examine the difficulties associated with legislating in areas where there is incomplete or no knowledge.

**Keywords:** multiple stressors; legal implications; causation

The function of law is to regulate human commerce and activities. Although the law applies to populations, it operates at the individual level. It remains the responsibility of every citizen to uphold the law. This presupposes that the individual knows the law, and understands the application of the law. The application must be constant and certain, as the law must be applied equally to all individuals. Lawyers strive for legal certainty, but in environmental law this comes into conflict with scientific uncertainty. In this chapter, the conflict between the requirements of legal certainty and environmental legislation will be examined.

There is a Greek myth about a box, which held all the woes of the world. The box was owned by Pandora. Ultimately curiosity overcame prudence, and the box was opened, releasing misery into the world. Once opened, the box could not be shut again. This is a useful analogy for environmental legislation, as once a chemical or organism has been released into the environment it may cause unforeseen effects that cannot be corrected.

The problem for the lawyer or legislator is how should we regulate the opening of the box when it is not known what will come out or what the effects will be. Historically law is based on certainty, and the concept of contingency law based on altering situations has not been utilized in any legal philosophical system. The certainty of the law contributes to the stability of society. For example, murder has been regarded as a wrongful act for thousands of years, throughout many societies. Murder is regarded as a criminal act, and as such is punished by the state. Affairs between individuals...
are largely based on contractual agreements, enforceable through the civil
courts, without government intervention.

Companies are generally regarded as legal entities, and can initiate or
settle legal actions in their own right. Although companies have to obey the
law, the range of sanctions against a company is more limited. If the company
offence is particularly offensive to the legal system, individual members of
the company may be held liable. Both companies and individuals are liable in
law for any harm they inflict on others, within certain limitations.

An individual who has been harmed must prove the cause of his harm,
that he has suffered loss and damage, and that the harm was reasonably
foreseeable. An example is an individual who falls down stairs, because
of liquid floor cleaner on the stairs. If the individual is injured, then both
the cause and the damage are proven, and the issue is one of reasonable
foreseeability. If the liquid floor cleaner was left on the stairs and there
was no indication of its presence, then the accident was foreseeable. If
however there was a warning cone, a sign that cleaning was in progress, and
the cleaner was actually working on the stairs, then the accident was not
reasonably foreseeable. In the first case the individual could recover damages,
whereas in the second case he could not.

The cause of damage in the above example was obvious, but complications
can arise. The doctrine of Res Ipsa Loquitur, or the events speak for themselves,
was developed after a gentleman was discovered lying unconscious outside
a beer factory, soaked in beer and covered with broken pieces of barrel.
Even though the man had no memory of the accident, and there were no
witnesses, it was held that it was so obvious what had occurred that it was
as if the events spoke for themselves. The common denominator in both
dependencies given is the temporal link between the time of the accident and the
observed result. The cause and effect happen in within a short time frame.
In some environmental situations, this short time frame also occurs, as for
example the Exxon Valdez oil spill, or the Bhopal Union Carbide plant.
Another strong link is the visibility of the accident – oil on an arctic beach
is noticeable, as are people dropping dead.

With environmental issues the links may not be as clear. The chemical or
toxin may not be visible, and its effect may not be apparent until considerable
time has elapsed. Generally, the longer the time interval, the harder it is to
prove cause and effect.

If there is one pollutant, and ultimately a measurable effect, then it will
be possible to demonstrate cause and effect. But what if one pollutant causes
multiple effects on different species or the effect on one species causes the
irreversible decline of a second species? In such cases the law will attempt to
establish the causa causans – the cause of causes. The majority of blame would
thus fall on this primary cause, and contributory blame on the secondary