

The new third law of ecology

Parth J Shah, Business Standard, 20 September 2005

The famous biologist Garrett Hardin coined the third law of ecology that captures succinctly the Green approach to environmental resource management. It links men's impact on the environment (I) with population (P), affluence (A) and technology (T).

$$I=P*A*T$$

Increase in population, consumption, or technological improvement, the law suggests, must result in greater environmental degradation. Sustainability, therefore, requires that population and technological change should either be slowed down or are altogether halted.

However the 1980 bet between Professors Julian Simon and Paul Ehrlich provides a different interpretation of the impact of population and technology on the environment. As the population increases, natural resources become scarce and hence their prices begin to rise.

As the price rises, entrepreneurs smell profit in the discovery of a substitute or a better method of production. Thus, charcoal got replaced by coal followed by petroleum. Next in line is fuel cell that runs on hydrogen which comes from water. West Asia would then be sitting on the oil wells that nobody would want.

In fact, the only resource whose price has consistently gone up in past 200 years is human labour. Simon, therefore, concluded that the ultimate resource is the human mind — the human population. As long as we don't run of human minds, we won't run out of resources.

The Julian Simon view, or what we call the Terracotta approach, redefines the third law of ecology as:

$$I=C*P*A*T$$

The impact depends on the proportion of resources that are collectively owned and managed (C), the ratio of resources whose use is not priced (P), the extent to which tort laws are under-utilised to determine liability and negligence (T), and the level of anti-science, anti-technology attitude (A).

Consider a national park which is collectively owned (C=1). The tribals living there engage in illegal tree felling and poaching. Absence of ownership removes the sense of responsibility. However transfer of ownership to the communities, (C<1) makes the user accountable for the maintenance of the forest and reduces the negative impact.

Absence of pricing mechanism implies overuse of a resource. Think of all the "free" resources — water, electricity, roads.

Tort law makes the polluter pay. Under the Superfund Facility in US, the federal government imposes a tax on companies that release hazardous substances which affect human health and environment. Bhopal Gas tragedy on the other hand is a classic example of the lack of tort law in India resulting in neglect and less compensation to the victims.

The anti-reason attitude fails to appreciate the power of human imagination and ingenuity. Unlike the Hardin's third law of ecology, the Terracotta approach sees human population and technology as saviors of the environment.