

resource considerations, i.e., control and access to resources, are not synonymous with environmental stress.

In considering linkages between the environment and national security, it is therefore not only important to clarify how the term national security is being defined, but also to identify as clearly as possible what type of "environmental factor" (i.e., resource depletion/access to resources; or environmental stress) is being discussed. In the case of fresh water availability issues that may lead to national security threats, resource scarcity as well as environmental stress concerns may arise. Moreover, these factors are interrelated. For example, upstream pollution may reduce downstream access to fresh water and contribute to resource scarcity. In this case, environmental degradation would be contributing to the resource scarcity. But this is intellectually distinct from a case where a country or subnational region faces a water scarcity because of local population, social or economic growth pressures. A region may simply desire to have more water than currently available locally. In this second case, resource scarcity rather than environmental stress defines the situation and often requires different solutions.

#### 4.2 Types of Environmental Stress

Different types of environmental stress are likely to raise different national security issues. Below are three analytical categories of environmental stress: in reality, cases of environmental stress could cut across categories.

- **Global Commons**

Environmental stress on the global commons refers to environmental damage that has global effects. That is not to say that the causes or the effects of environmental damage are distributed equally globally. Chlorofluorocarbons (CFCs) that deplete the ozone layer, and thereby allow higher levels of ultraviolet light to reach the earth is a global commons environmental issue. The "greenhouse effect" brought about by increased concentration of gases, principally carbon dioxide, in the atmosphere is also a global commons issue. Carbon dioxide is produced by the burning of fossil fuels, such as in car engines; consequently, economic development based on hydrocarbons implies continued emission of carbon dioxide. The warming of the earth's surface is expected to give rise to changes in climatic conditions, and this could have negative consequences, such as raising the sea level. Degradation of the oceans, and over-harvesting of fish are also global commons issues.