

A FRAMEWORK FOR SUSTAINABILITY SUMMARY OF THE NATURAL STEP

Numerous systems have been developed to help understand sustainability. The Natural Step is a framework that can help guide us toward a sustainable endpoint. It was developed in 1989 by Swedish oncologist Karl-Henrik Robert. He realized that humans are destroying the natural environment and lack fundamental principles for deciding what kinds of changes are needed.

Robert began searching for fundamental guidelines to define sustainability, based on basic scientific principles. He then sought consensus on his draft guidelines from fellow scientists and eventually broad agreement was reached on four principles, which became the heart of The Natural Step. These are called the Four System Conditions, and they are:

1. Don't subject Nature's functions and diversity to increasing concentrations of substances extracted from the Earth's crust.

This means burning fossil fuels, and mining metals and minerals must not occur at a rate that causes them to systematically increase in the ecosphere. We must decrease dependence on fossil fuels, and recycle metals and minerals.

2. Don't subject Nature's functions and diversity to increasing concentrations of substances produced by society.

That means, we need to use materials that nature can recycle, and avoid persistent substances (i.e. DDT and PCBs), plastics and other synthetic materials that nature can't recycle.

3. Don't impoverish nature's functions and diversity by physical displacement, over-harvesting, or other forms of ecosystem manipulation.

That means, we must live off the interest of what nature provides and not use up nature's capital. Biodiversity provides the foundation for ecosystem services which are necessary to sustain life on this planet.

4. Use resources fairly and efficiently in order to meet basic human needs globally.

Achieving fairness is essential to creating the social stability and cooperation needed for large-scale changes within the framework of the first three conditions. To achieve this fourth condition humanity must live using fewer resources, especially in affluent areas.

Robert perceives that humans have reversed evolution:

"Most people are not aware that it took living cells about 3.5 billion years to transform the virgin soup of the atmosphere -- which was a toxic, chaotic mixture of sulfurous compounds, methane, carbon dioxide, and other substances -- into the conditions that could support complex life.

"In just the last DECADES humans have reversed this trend. First we found concentrated energy like fossil fuels and nuclear power. As a result, we can create such a high throughput of resources that natural processes no longer have the time to process the waste and build new resources.

"Dispersed junk is increasing in the system as we lose soils, forests, and species. So we have reversed evolution. The Earth is running back towards the chaotic state it came from at a tremendous speed."

For a transition to sustainable behavior to evolve there needs to be a shared mental model. This shared framework for their goals allows people to enter a much smarter dialogue. To learn more about the Natural Step go to the Oregon Natural Step Network website: www.ortns.org.