






CHAPTER 20

PRIMARY SOURCES OF HUMAN WEALTH: THE BIOSPHERE AND KNOWLEDGE

ALL RENEWABLE RESOURCES ESSENTIAL TO THE HUMAN ECONOMY ARE GENERATED BY THE PRESENT BIOSPHERE.

-  All life on Earth, including *Homo sapiens*, is part of the Biosphere, not apart from it.
-  One biospheric service is the assimilation and transformation of wastes (including carbon dioxide) that result from transformation of natural resources into products valuable to human society.
-  The Biosphere is a finite component of a finite planet so its ability to produce resources and assimilate wastes is limited.
-  The Biosphere is a complex, multivariate, interactive system with tipping points which, if passed, result in irreversible change.
-  Since the Biosphere produces resources essential to the human economy, it should be protected and nurtured.

KNOWLEDGE IS THE OTHER PRIMARY SOURCE OF HUMAN WEALTH, AND ONE OF THE CRUCIAL SOURCES IN THE 21ST CENTURY IS SCIENCE.





- 🌐 **Society makes an investment in education for the young that is essential at present in the era of global competition for jobs.**
- 🌐 **Some young, educated individuals will invest 4-10 years of their lives and considerable amounts of money in obtaining one or more degrees in science.**
- 🌐 **Many fields of science also require the investment of more time and money for keeping up with the latest publications, equipment, and methodology in that particular field.**
- 🌐 **Scientists will also spend much time as mentors of aspiring scientists who will ensure continuity in the various fields of science.**
- 🌐 **Research scientists will spend as much as 60 to 70 hours weekly in their professional activities, such as teaching, advising, service on academic committees, and out-of-town conferences and lectures.**



THE WEALTH IS ACTUALLY PRODUCED BY 99% OF THE HUMAN POPULATION (WHO OBTAIN BIOSPHERIC RESOURCES AND PROCESS, TRANSPORT, AND RETAIL THEM) AND SCIENTISTS, WHO ARE ONE OF THE GENERATORS OF KNOWLEDGE.

- 🌐 **The wealthy 1% of the population rarely interacts with either of these processes.**
- 🌐 **A few of the 99% may be in the 10% of the wealthy through promoting the consumption of processed resources and the use of knowledge generated.**
- 🌐 **Individuals who collect and process the resources and who generate knowledge are not the primary beneficiaries of the wealth generated.**
- 🌐 **Most 99 percenters appeared satisfied until late in the 20th century when foreclosures on houses and repossession of cars was coupled with the loss of financial security.**

IN TOO MANY INSTANCES, BENEFICIARIES OF WEALTH, BOTH INDIVIDUALS AND CORPORATIONS, ARE TRYING TO ELIMINATE REGULATIONS THAT PROTECT THE BIOSPHERE (ENVIRONMENT).

-  **If not diminished, the increasing disparity in wealth will produce social unrest and ultimately revolution, which is harmful to individuals, corporations, the Biosphere, and the human economy.**
-  **Only when social unrest is minimal will civil discourse about global crises be possible.**
-  **If the present Biosphere collapses or is functionally impaired, wealth will be no protection from the consequences.**
-  **Biospheric resources are already diminished as evidenced by ecological overshoot, which is primarily the result of loss of natural capital.**



THE ECOLOGICAL COST OF MAKING A FEW INDIVIDUALS WEALTHY (1% IN THE UNITED STATES) HAS BEEN EXTREMELY HIGH, AND THE ANTHROPOGENIC BIOSPHERIC DAMAGE CONTINUES.

- 🌍 **Many species have been driven to extinction, and many other species are so impoverished (e.g., small surviving populations) that they are of little or no ecological significant.**
- 🌍 **Even in “successful” species, billions of individuals are living in misery.**
- 🌍 **Damaging natural capital at present rates, or very likely any rate, is unsustainable, so gains in monetary wealth will be of short duration.**
- 🌍 **Every time an ecological tipping point is passed, the change is irreversible.**

THE BIOSPHERE IS GLOBAL, SO PROTECTION AND NURTURING MUST BE GLOBAL.



- 🌍 The number of starving humans has been estimated at 1.1 billion, and at least 1 billion more are malnourished. Why should these people protect the Biosphere when their future is already grim?
- 🌍 Much must be done in the second decade of the 21st century to keep Earth habitable for *Homo sapiens* and many millions of other species.
- 🌍 Climate change forcing factors (e.g., droughts) that reduce agricultural productivity could kill those living in misery and lower living conditions for many more who now have barely adequate living conditions.
- 🌍 What will be done to relocate the many millions of refugees displaced by rising sea levels in deltas (e.g., the Ganges) and coastal areas (e.g., some of the world's major cities)?





IN ADDITION TO ENVIRONMENTALLY LITERATE PEOPLE, CLIMATE CHANGE AFFECTS THE “UNINFORMED (OR MISINFORMED)”.¹

- 🌐 **Environmentally literate individuals must keep up with the latest scientific publications and dispense evidence about climate change. Reason and evidence may not prevail, but it may and that is what matters.**
- 🌐 **The uninformed are seeing more evidence of climate change, which may convince them to become better informed. The news media will be pivotal because people often remember what they read. Responsible journalism should inform the public about risks to which it is exposed.**²

THE MISINFORMED MAY HAVE BEEN DUPED, BUT THEY HAVE CHILDREN AND GRANDCHILDREN AND ARE FOND OF THEM.

-  **As these youngsters fall victim to pollutants, the misinformed will surely look for causes, and objective reporting on scientific investigations should persuade them to reexamine their values.**
-  **One can only hope that transformation occurs before life on Earth, including humankind, has suffered loss of health and life.**

 **SURELY, THE TRUE SOURCES OF HUMAN WEALTH — THE BIOSPHERE AND KNOWLEDGE — SHOULD GET MORE RESPECT THAN THE TOP 1% OF WEALTHY INDIVIDUALS WHO MERELY EXPLOIT THE BIOSPHERE AND KNOWLEDGE TO THEIR MONETARY ADVANTAGE.**

-  The two sources of human wealth should be nurtured and passed on to future generations instead of being exploited and damaged for short-term financial gain that primarily benefits 1% of the population.

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References

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- ² Jackson, L. P. 2011. Too dirty to fail? Los Angeles Times 21Oct <http://articles.latimes.com/2011/oct/21/opinion/la-oe-jackson-train-act-20111021>.