

The Spirit of Green: The Economics of Collisions and Contagions in a Crowded World by William D. Nordhaus, 368 pp, Princeton University Press (2021), \$26.95

The human evolution from the primitive age to modern times has been astounding. This evolution process, however, has been marked by certain undesirable outcomes, putting at risk the future of the entire planet. It is against this background that the book “The Spirit of Green” written by the Nobel laureate William D. Nordhaus offers an outstanding vision of creating a Green Society from the perspectives of economics, politics, and ethics.

The term Green Society has been used by the author to describe a society that provides credible solutions to tackle environmental damage, while ensuring sustainable development. Unlike the two extreme positions - with the far-right calling climate change a hoax and the far-left understating human preferences by emphasising biocentric approach and environmental values - The Spirit of Green provides a balanced view on the human and planetary needs. The author has used the term “Green” to represent a movement to deal with human collisions with nature and other forces of degradation in the contemporary world.

The book comprising 25 chapters is divided into six parts and gives a nuanced understanding of environmental economics even to non-specialists. The book explains various concepts and their applications through specific examples, adding to its lucidity. It covers all aspects of environmental economics, *i.e.*, sustainability, corporate responsibility, behavioural science of environment, political and global context, and the failure of the market.

The first part of the book titled “Foundations of Green Society” talks about the fundamentals of environmental economics *i.e.*, efficiency, externality and public regulations. A central theme of the discussion in this book is the role of efficiency. Nordhaus brings out three themes to promote efficiency, *i.e.*, dealing with negative externalities, addressing informational deficiencies to encourage green behaviour and correcting behavioural anomalies that may

arise due to people's flawed decisions so that all stakeholders can work in their own best interest.

Negative externalities reflect the failure of the market or the so-called invisible hand of the market being rendered incompetent, as argued eloquently by the ecologist Garret Hardin in his essay titled "The tragedy of the commons". Such externalities can arise due to many factors. First, unregulated markets can produce uncontrolled pollution or environmental damages. Secondly, the muddled ownership of public or "common property" resources can also give rise to negative externalities. To correct this, Nordhaus stresses on the Pigouvian idea of fiscal measures, including environmental taxes and subsidies, and creation of property rights. Alternatively, governments could regulate pollution or environmental damages through the imposition of carbon pricing. He emphasises that for efficient regulation, marginal cost of reducing emissions must equal the marginal benefit. The book also alludes to the role of institutions and technologies in providing positive externalities to counter the impact of negative externalities. The book argues in favour of greater public investment in green technologies and strengthening the associated intellectual property rights (IPR).

After discussing about public regulations to counter negative externalities, Nordhaus explains the concept of Green Federalism, wherein each tier of the government has certain well-defined responsibilities towards the environment. This concept recognises that solutions to externalities need deft handling at different tiers of the federal ladder. This also underscores the role of micro policies to deal with the environmental challenges instead of assuming a one-size-fits-all approach.

The first part of the book ends with a discussion on the fundamental principle of the Green Society *i.e.*, Green Fairness. It comprises three major features: (a) generational fairness *i.e.*, how the future is treated; (b) environmental justice or the impact of green policies on the distribution of income; and (c) environmental ethics dealing with fairness to animals.

The second part of the book ventures into sustainability in a perilous world, and begins by explaining the concept of Green Economics. The author has expounded the concept by presenting two contrarian views, one by Michael Jacobs, the author of the book 'The Green Economy' and the other

by neo-classical economists. The neoclassicals treat environmental goods and services like normal goods or services except that they suffer from market failures. According to this view, the remedy lies in correcting the market failure. Michael Jacobs, by contrast, argues that the preference of the people today may not reflect the interests of the future generations and consequently, there is an undervaluation of public goods and downplaying of sustainability under the neoclassical view. Furthermore, there is a bias in favour of the present reflected by a high discount rate, which needs to be corrected in a well-functioning Green economy.

The book argues that it is important to account for the externalities in economic accounts to get the true value added and achieve sustainability. The book alludes to Weitzman's approach of environmental accounting in which, the harmful externalities are assigned prices (with a negative sign) and then added to total value to get the Green value added.

A fascinating discussion relating to sustainability in the book is on exo-civilisations, a term used by the author for space or other planets. Since the idea of whether human civilisation can survive outside the earth has not been studied enough from the point of view of environmental economics, the book's view that the prospects of self-sustaining exo-civilisations remain remote appears interesting.

The author also discusses the tail events *i.e.*, extreme events with less probability but having dire consequences, such as the pandemic posing a challenge to sustainability owing to their unpredictable nature and fast spread. To deal with such catastrophes, the book suggests four policies namely, adequacy of relevant scientific and technological expertise, preparedness, effective execution and communication by leaders.

The third part of the book delves into behaviouralism and Green politics. Environmental problems are often caused due to behavioural anomalies *i.e.*, harmful private actions or flawed decisions rather than market failures. The book discusses two examples of such anomalies: defective discounting and first cost bias. The first arises as people use high discounting rates, making the investment payoffs look less impressive. This limits the possibility of Green investments. The first cost bias arises when individual choices with respect to investments are myopic ignoring life-cycle costs, and resultantly harming the environment at present.

On Green politics, the author emphasises three key points. First, most challenges of the Green movement can be addressed by the government through regulatory policies and a legal framework. Second, environmental policies can often take years to get implemented due to governmental inertia and with leaders getting influenced by anti-science factions in the society. Lastly, the author has stressed upon the need for coordination and cooperation to overcome factional interests and free riding. In case of climate change, the lack of coordination among nations and free riding continues to hamper a meaningful progress towards a global solution.

The fourth part of the book examines the application of environmentally sustainable measures across the social and economic landscape. It begins by explaining the role of profits as the driving force behind market activities. Profits guide firms' production decisions and act as the compass for a market economy. Distorted profits, which ignore the social costs of production, may lead to negative spillovers. To prevent such a situation, an accurate compass of profits as a true measure of social value is needed to guide the economic decisions in the Green direction. The other way could be taxing the polluter.

As in Part one, the author also focuses in Part four on the role of Green taxes in increasing economic efficiency while generating revenues for the government. Among various Green taxes, the author emphasises upon the use of carbon tax, which has a large tax base and is comparatively easier to enforce than taxes on air or water pollutants. While carbon taxes are indeed a useful solution to addressing negative externalities and controlling environmental damages, a curious case of implementing these taxes is of network commodities that follow a global or trans-border production/supply chains.

Green innovations can also increase economic efficiency while bringing down environmental damages. In the chapter titled "The Double Externality of Green Innovation", the author argues that a wide wedge between the social return and private return to the innovator can disincentivise green innovations. Hence, there is a need to find ways to motivate private firms to invest in low-carbon innovative technologies, such as putting a price on pollution.

The book also discusses individual ethics in implementing the Green concept. The idea of “no-regrets policy” as a solution to unregulated externalities implies that a small reduction in individual footprints can have a very small impact on oneself but it can significantly improve the general welfare. The author also suggests the extension of the no-regrets policy to corporate social responsibility (CSR) or environmental, social and corporate governance (ESG) and green finance decisions.

On ESG, the author has rightly emphasised that firms should focus on investments in improving the lives of their workers and society, which will result in increased profitability in the long term. Companies can make large contributions to society with small tolerable impact on their own profits, an illustration of the no-regrets policy. Companies also have the responsibility of reducing information asymmetry by providing accurate information about the potential harmful environmental effects of their products.

The final part of the book explains the current global challenges towards the Green transition; the author has proposed four points for this. First, there is a need for greater global acceptance of the gravity of climate change for a collective fight. Second, countries must establish a mechanism to raise the price of CO₂ and other greenhouse gases through carbon taxes or emission fees. Third, there is a need for a climate compact, *i.e.*, a coalition of nations committed to reduce emissions for effective global coordination. Lastly, there is a need for governments to develop technologies towards a less-carbon-emitting global economy. While discussing the various pathways to address climate change, countries should not lose sight of the UN Framework Convention for Climate Change (UNFCCC) principle of “Common but Differentiated Responsibility and Respective Capabilities”, a fundamental principle underlying climate equity and justice.

The concluding part delves into the critiques of the concept of Green. The author explains different views on Green using a spectrum of colours. The two extremes are deep green (far-left) and muck brown (far-right). The far-left approach puts a large weight on biocentric and environmental values with very less weight on human preferences. On the contrary, the far-right approach puts profits above social welfare. The Spirit of Green, as advocated in the book, lies at the centre of this spectrum. It utilises the Goldilocks

principle *i.e.*, regulation should have the right balance. It should be neither too draconian nor too soft. Since markets alone cannot solve negative externalities and the government alone cannot allocate resources effectively, they need to work together in this movement.

In sum, *The Spirit of Green* is a must read for curious minds desiring to know more about the contemporary global problems. It provides a holistic world view of the various problems encountered in implementing the spirit of Green. It is a guide for humanity's future written with great clarity of thought and a passionate mind.

Tista Tiwari*

* Tista Tiwari is Manager in Department of Economic and Policy Research at the Reserve Bank of India, Mumbai.