Sustainable Humanity, Sustainable Nature: Our Responsibility

Joint Workshop of the Pontifical Academy of Sciences and the Pontifical Academy of Social Sciences

Are Humanity's dealings with Nature sustainable? What is the status of the Human Person in a world where science predominates? How should we perceive Nature and what is a good relationship between Humanity and Nature? Should one expect the global economic growth that has been experienced over the past six decades to continue for the foreseeable future? Should we be confident that knowledge and skills will increase in such ways as to lessen Humanity's reliance on Nature despite our increasing economic activity and growing numbers? Is the growing gap between the world's rich and world's poor in their reliance on natural resources a consequence of those growths?

Contemporary discussions on the questions are now several decades old. If they have remained alive and are frequently shrill, it is because two opposing empirical perspectives shape them. On the one hand, if we look at specific examples of what one may call natural capital, there is convincing evidence that at the rates at which we currently exploit them, they are very likely to change character dramatically with little advance notice. *The melting of glaciers and sea-ice* are recent symptoms. On the other hand, if we study trends in food consumption, life expectancy, and recorded incomes in regions that are currently rich and in those that are on the way to becoming rich, resource scarcities wouldn't appear to have bitten so far.

"Environmental problems" and "future prospects" present themselves in different ways to different people. Some identify environmental problems with population growth, while others identify them with wrong sorts of economic growth. There are those who see environmental problems as urban

pollution in emerging economies, while others view them through the spectacle of poverty in the world's poorest countries. Some allude to "sustainable development" only when considering economic development in the global economy, while others see it in terms of the development prospects of villages in sub-Saharan Africa. Each of the visions is correct. We know that what begins as urban pollution becomes layers of atmospheric brown clouds (ABCs), containing black carbon particles and ozone, that annually destroy some 2 million lives and over 100 million tons of crops, disrupts the Monsoon circulation and contribute to the melting of arctic ice and the Himalayan snow. There is no single environmental problem, there is a large collection of interrelated problems. Some are presenting themselves today, while others are threats to the future. Although growth in industrial and agricultural pollutants has accompanied economic development, neither preventive nor curative measures have kept pace with their production in industrialized countries. That neglect is now prominent in the rapidly growing regions in Brazil, Russia, India, China, and South Africa (BRICS). Moreover, the scale of the human enterprise has so stretched the capabilities of ecosystems, that Humanity is today Earth's dominant species. During the 20th century world population grew by a factor of four (to more than 6 billion) and world output by 14, industrial output increased by a multiple of 40 and the use of energy by 16, methane-producing cattle population grew in pace with human population, fish catch increased by a multiple of 35, and carbon and sulfur dioxide emissions by more than 10. It is not without cause that our current era has been named the Anthropocene.

On the other hand, economic growth has brought with it improvements in the quality of a number of environmental resources. The large-scale availability of potable water and the increased protection of human populations against both water- and air-borne diseases in advanced industrial countries have come allied to the economic growth those countries have enjoyed over the past 200 years. Increases in scientific knowledge, investment in public infrastructure, and universal education in advanced industrial countries have meant that citizens there have far greater knowledge of environmental hazards than their counterparts in poor regions. They also have resources to avoid them.

Many people are convinced that scientific and technological advances, the accumulation of reproducible capital, growth in human capital, and improvements in the economy's institutions can overcome diminutions in natural capital. Otherwise it is hard to explain why so much of the social sciences in the 20th century has been detached from the environmental sciences. Nature is all too often seen as a backdrop from which resources and services can be drawn in isolation. Macroeconomic forecasts routinely exclude natural capital. Accounting for Nature, if it comes into the calculus at all, is usually an afterthought. The rhetoric has been so successful, that if someone exclaims, "Economic growth!", one does not need to ask, "Growth in what?" – we all know they mean growth in gross domestic product (GDP). The rogue word in GDP is "gross". GDP, being the market value of all final goods and services, ignores the degradation of natural capital. If fish harvests rise, GDP increases even if the stock declines. If logging intensifies, GDP increases even if the forests are denuded. And so on. The moral is significant though banal: GDP is impervious to Nature's constraints. There should be no question that Humanity needs urgently to redirect our relationship with Nature so as to promote a sustainable pattern of economic and social

development.

A Proposal

Rio+20 Summit on biodiversity preservation was convened to provide a resolution to the problems Humanity faces in our interchanges with Nature. In practical terms though, it is widely acknowledged to have been a failure.

Looking through its programme it is hard to detect an overarching intellectual framework that was used to identify Nature's constraints. The lacuna was inevitable. There was no collective endeavour among natural and social scientists. That is why we are proposing a joint PAS-PASS workshop on *Sustainable Humanity, Sustainable Nature*.

Our idea is not to catalogue environmental problems. We propose instead to view Humanity's interchanges with Nature through a triplet of fundamental, but inter-related *Human* needs – *Food*, *Health*, and *Energy* – and ask our respective Academies to work together to invite experts from the natural and the social sciences to speak to the various pathways that both serve those needs and reveal constraints on Nature's ability to meet them.

P.S. Dasgupta, V. Ramanathan, R. Minnerath

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