



The challenge of assessing future risks

The manner in which we measure value prevents us from formulating and implementing effective policies for ecological sustainability

It is evident that the ecological capital of our planet, composed of natural assets such as land, forests, rivers and oceans and even the air we breathe, is being systematically and relentlessly eroded, threatening the well-being, perhaps even the survival of future generations. We are living on an ecological 'overdraft', which implies using the planet's natural assets on a scale that is far beyond the capacity of nature replenishing them. While this appears to be patently obvious, why is it so difficult to implement policies to ensure ecological sustainability? The answer lies in the biases and gaps which are inherent in our system of accounting, which is the basis on which economic activities are evaluated and cost-benefit ratios are calculated. For example, forests will continue to be cut as long as timber enjoys greater market value than a tree which lives and grows in the forest. As a living tree, it absorbs atmospheric carbon dioxide, serves as a source of moisture in the air and helps bind the soil and sustain life in its undergrowth. The value of all these ecological services escapes accounting because they are difficult to quantify and price.

Economists are familiar with the concept of 'externality'. This is defined as "the cost or benefit that affects a party who did not choose to incur the cost or benefit". Externality is inherent in most sustainability challenges. For example, factories which are contaminating our rivers with toxic effluents are imposing a cost on society, which is not reflected in their

books. Climate Change is taking place as a consequence of greenhouse gases accumulated in the earth's atmosphere through the burning of fossil fuels over several decades by industrialised countries. But the cost of meeting the challenge of Climate Change is being borne by the entire planet. The current accounting systems are not geared to assessing externality, because costs and benefits cannot be imputed to specific countries with any degree of precision.

This makes it difficult to formulate effective responses to global challenges, such as Climate Change, which need collaborative responses on a global scale and involve equitable burden sharing.

Risk assessment and mitigation are key to the efficient functioning of our economies. We are constantly weighing risks against expectations of benefits. The risk premium is a quantifiable component of cost accounting. However, the accounting tools we use to make risk assessments are biased towards "demonstrable, quantifiable and immediate effects", acknowledging what we can put a number on while ignoring or undervaluing what we are unable to quantify. But, the absence of quantifiable evidence does not imply the absence of a particular effect or consequence. But that is the assumption upon which much of our risk assessment is calculated. This inherent bias in our accounting system leads to a constant undervaluation of ecological challenges which grow gradually over time. For example, the melting of glaciers in the Himalayas, the ice sheets of Antarctica and

the Arctic proceed in a graduated manner but may accelerate once a certain threshold is reached. But our accounting tools are not designed to assess these longer-term risks and, as we observed earlier, how do we assign costs because these effects too are in the nature of an externality. It is precisely for this reason that unexpected 'Black Swan' events occur such as the recent Kerala floods. The cutting down of the dense forests of the Western Ghats may have enabled mineral extraction units and industrial plants to be set up, generating development and prosperity in conventional terms. But the massive costs imposed on the people of Kerala as a result of this unthinking ecological degradation escaped accounting because there were no tools to measure the risks involved. What cannot be measured does not exist, at least for accounting purposes. And this is a recipe for disaster.

There is another aspect of ecological sustainability which is a challenge for conventional accounting. If we consider the Sustainability Development Goals (SDGs) adopted by the United Nations, what is striking is the explicit acknowledgement of the inter-relationship among different domains. In raising agricultural production, which will contribute to food security, we take into account input costs such as seeds, fertilisers, pesticides, and water. However, the use of chemical fertilisers and pesticides imposes significant health costs on the farmer and his family members through constant exposure to toxic substances. This affects health security, but health costs are not added to the cost of agricultural production. The intensive use of water in such production is leading to the lowering of the water table, depleting underground water resources. This is affecting water security, but this cost is also not accounted for in agricultural production. Sustainability is a very complex phenomenon characterised by strong feedback loops among different domains of economic activity. Our accounting systems are unable to handle such feedback loops, especially when there are multiple sources involved.

The world is facing an ecological emergency. We may not know what the tipping point is until we actually cross the threshold towards crisis. The manner in which we measure value, discount the future and assess risk, prevents us from formulating and implementing rational and effective policies for ecological sustainability. There is an urgent need to undertake research and design accounting systems which support the goal of ecological sustainability rather than promote the bias in favour of present consumption against future risk. India should take the initiative in this regard both because its ecological challenge is becoming more urgent and compelling by the day. It would also contribute to global efforts to ensure a more sustainable future for mankind.



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