



## Ecological Services

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Dear Friends,

In this month, we shall discuss the role of Ecological Services that we draw upon freely from our Mother Earth, and in that process what we are leaving behind for our children and grandchildren. This is another important concept that helps to build the framework for sustainable development (SD). All economic models (See. Fig. 1) consider the production and consumption system and the transactions that happen for this purpose, like people work in factories and get paid in terms of wages. However, as the Fig. 3 shows, the entire economic system

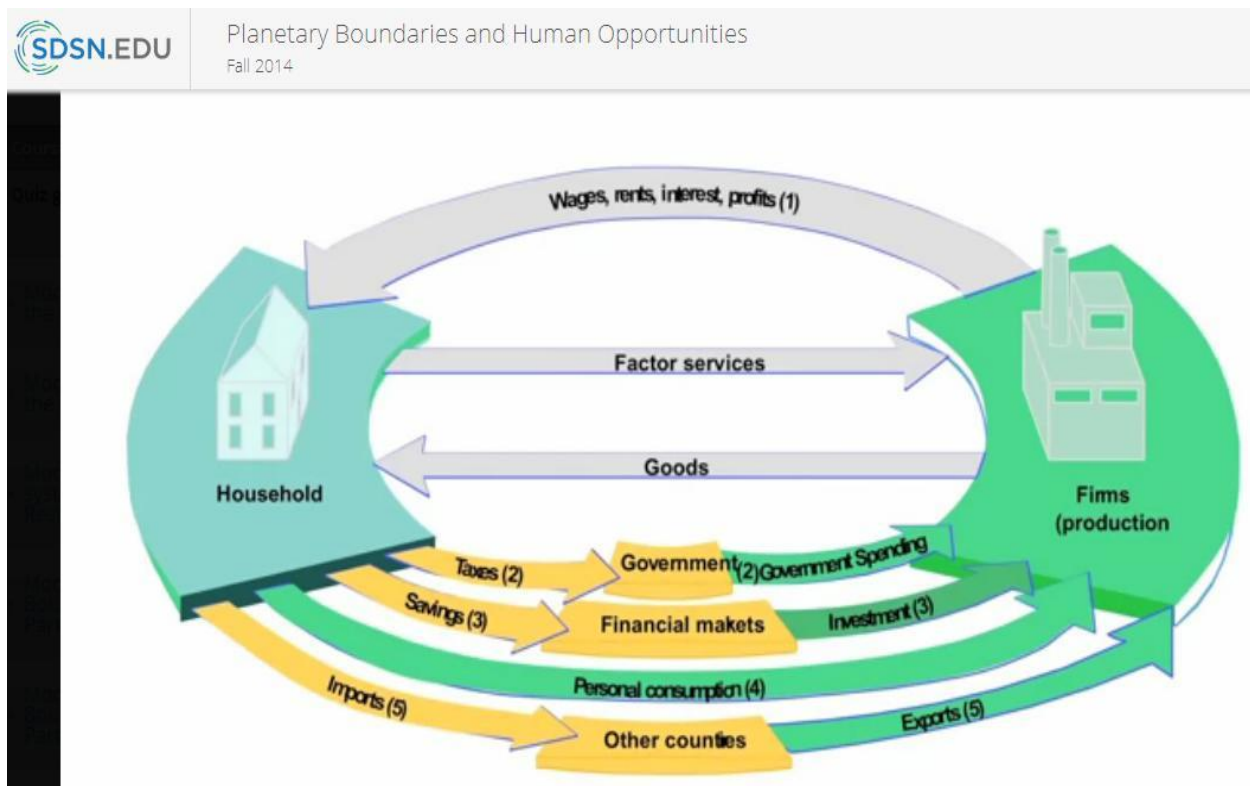


Fig. 1

operates within our physical environment, and it draws upon several ecological services from nature, for which we do not pay anything. These may be broadly classified into provisioning services like food, fiber, genetic resources and fresh water, regulating services like air quality, climate, pollination, disease, pests, natural hazards etc. and cultural services like eco-tourism. Tour

operators charge us money for taking us to various tourist spots, and other than spoiling the pristine natural beauty of these spots, we never ever think of paying back Mother Nature for the joyous experiences we derive from Her.

As our consumption needs are ever growing, scientists have made some calculations of what the earth can provide for us in a year, and how much we are drawing every year from the earth. As a very rough measure, before and during the sixties, annually we were drawing less than what the earth could give in a year. In the late sixties, our annual demands over Mother Earth equaled what She could give in a year. Since then, our demands have been increasing steadily. Please see the Chart: Earth Overshoot Day (Fig. 2). This figure tells us year on year, the date and month when we finished consuming what the earth could give us in a full year, and begin to consume more than that. As you can see, this date has been progressively shifting back from December to August 1st last year. This means that progressively we are drawing more and more from Mother earth that what She can give in a year.

These calculations show that currently we are consuming 1.7 earths every year. Other facts show that 15 out of 24 of these ecological services are dwindling. Therefore, we consumed whatever Mother Earth can provide over a full year by the beginning of August in 2018, and then we are all living upon borrowed capital. This is certainly not sustainable.

Let us try to understand this using a simple analogy. Suppose I run a small grocery shop to earn my living. But my requirements are ever increasing, and in order to meet my increasing needs, I start drawing freely from my store, without paying for it. Soon, I shall have no stock to sell, and my business will have to be closed down. Although this is an over simplification, we are doing something similar to our Mother Earth.

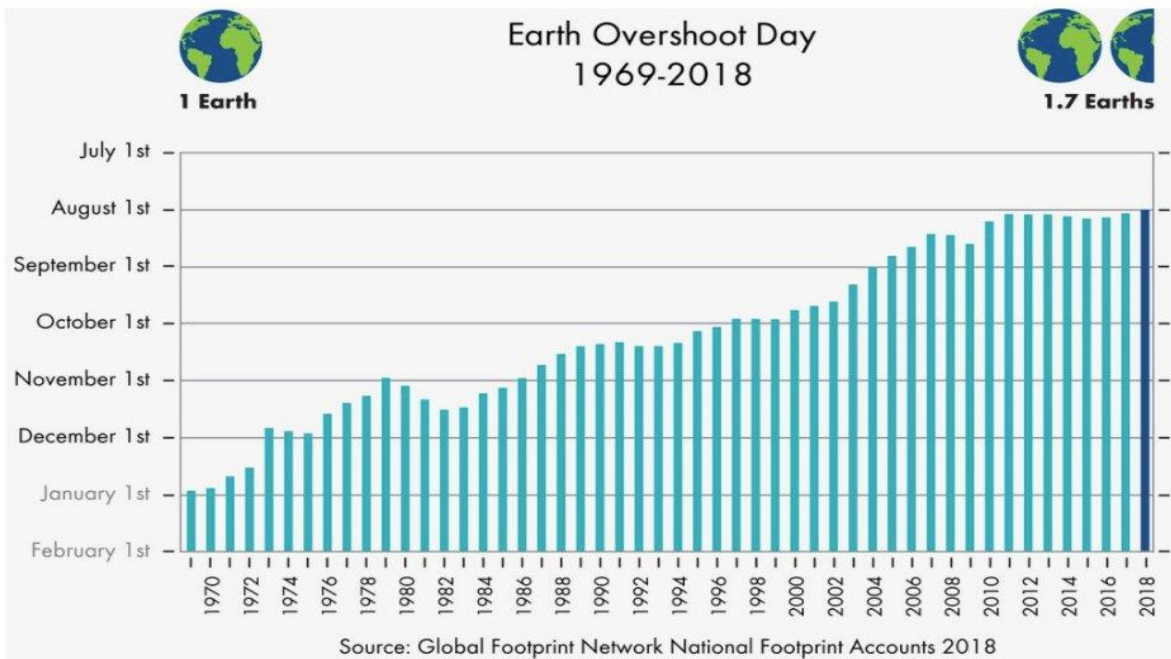


Fig. 2

<https://www.weforum.org/agenda/2018/08/today-we-have-consumed-a-whole-years-worth-of-the-earths-resources/>

Figure 3 shows that the contributions of all ecological services enjoyed by us, far outweighs those that we humans contribute towards everything that is produced and consumed.

All our economic measures for growth are sadly focused on GDP that fails to take into account the immense contribution we draw from Nature in the form of 'free' ecological services. It is necessary to revise our rather curtailed notion of economics, and this is beginning to happen. Prof. Johan Rockstrom says that these ecological services are no more 'free' and Mother Earth has started to send us 'invoices' for these services. There has been a definite increase in the extreme events in Nature, and these are 'invoices' being sent by Nature. In other words it's high time that we all take into account our withdrawals from Nature and at least start accounting for it. It is therefore, essential for all of us to join hands and reduce our levels of consumption, and try our best to reverse this trend.

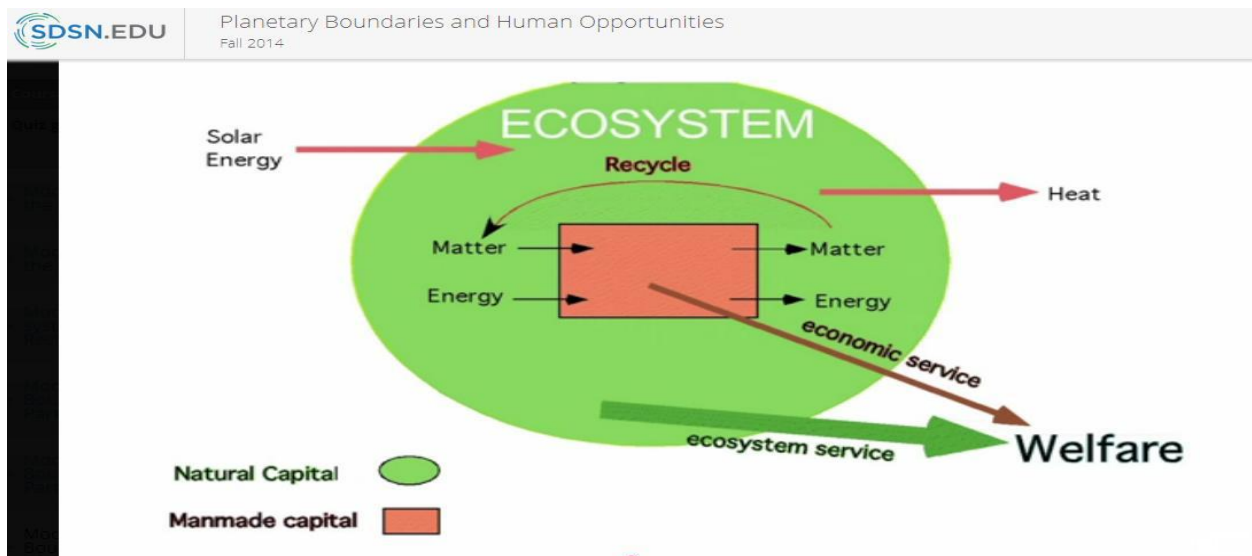


Fig. 3

Thank you.

Wishing all of us a sustainable future.

*Source: Sustainable Development Solutions Network (SDSN) and Planetary Boundaries and Human Opportunities (PBHO).*

