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MAKING THE LIVEABLE PLANET EARTH

Learning, Living and Leading

6th Annual International Conference on Sustainability - SUSCON VI

Editors:
Tapas Kumar Giri
Sanjita Jaipuria
Arindum Mukhopadhyay
Bidyut Jyoti Gogoi
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Message from Director

Sustainability is no more a buzzword rather has been an imperative in day to day live as evidenced from the increased trend in participation of corporates and governments in the 2015 Paris climate agreement and UN Sustainable Development Goals (SDGs) to guide their sustainability work. Sustainability is beyond mere fiscal economic growth, encompasses healthy living for all in a healthy and enabling environment; where there is no sufferings from multidimensional poverty and inequality, injustice and power imbalance, but on the contrary empowerment of the weaker section at the bottom of the pyramid, health, education and employment opportunities for all, as much as for maintain the healthy ecosystems. It has always been a great challenge before Human society to maintain the ecological balance of the only living planet while exploiting its goods and services against the constant demand for growth and wellbeing. While IIM Shillong envisions creating global leaders with Indian thoughts, our mission remains to establish a Sustainable society – wherein our special focus has always been for a responsible and inclusive business development with sincere commitments towards the bottom of the pyramid and the underprivileged sections of the society. I am happy to present the proceedings of *SUSCON-VI: Learning, Living and Leading* the sixth annual international conference of IIM Shillong on sustainability. I must congratulate my colleagues in the Suscon Organising Committee and the Scientific Committee for successful completion of the conference and bringing this selected papers volume published. The papers in this proceedings are selected based on peer and blind review out of 87 papers presented in the Conference. I congratulate all the authors for writing their papers in Suscon. I hope the papers will bring different perspectives and insight in sustainability for one and all. I also take the opportunity to congratulate all the distinguished Keynote Speakers, Eminent Panelists and Delegates from India and abroad and the sponsors for actively contributing the annual conference. I hope the message of sustainability initiatives taken by IIM Shillong will spread across the nation and abroad and will get a new momentum.

Prof. Keya Sengupta

SUSCON VI Chair Speaks

As the twenty first century is marching ahead towards material progress with an unprecedented pace, we are increasingly facing severe challenges of survival and sustenance not just as individuals but in our society and organizations, in the natural world and the planet at large. Mankind has come to realize that mere techno-economic knowledge is not enough unless we explore alternate sources and methods of learning that will lead to organizational, socio-economic and ecological sustainability. Keeping this in view IIM Shillong's Sixth Annual International Sustainability Conference (SUSCON VI) weaves round the title of 'Learning for Leading and Living'.

Time has come we need to unlearn a lot of our dominant models and assumptions of progress and development in order to create and sustain as Dr. A P J Abdul Kalam had termed 'A Livable Planet Earth' in future. Learning from Nature and other indigenous cultures will constitute a significant aspect of our new learning initiatives. This will necessitate developing enlightened leaders of thought and action in academia, business, society, NGOs, Government and multilateral organizations. Thought leadership will be of utmost significance in this regard to steward humanity and especially the youth towards a better tomorrow. Life or Living in coming age will be built around trust and cooperation instead of mindless careerism, consumerism, and fierce competition that is driven by the gospel of survival of the fittest (Social Darwinism) that dominates the mindsets of the decision makers in our so-called 'Brave New World'.

The values that will shape this humanistic philosophy in future will lay emphasis on Respect for Nature, Reverence for Life, Spirit of Service and Sacrifice, Sensitivity to Indigenous Cultures and Joy and Creativity in Learning. From the Indian point of view, it is time to take a relook at the insights of Rabindranath Tagore and Mahatma Gandhi for inspiration and meaningful transformative action.

SUSCON VI is thus a both a forum and a pledge to add force to the Sustainability movement that constitutes a unique characteristic of IIM Shillong since inception, with thrust on Creative Learning and Inspired Leadership aiming towards a Sustainable and Happy Living for the Self, our Organizations, Society and the Planet.

Prof. Sanjoy Mukherjee

Acknowledgment

SusCon- the annual international sustainability conference has been one of the important event of IIM Shillong, started in 2010 with the able supports of IIM Shillong Fraternity entwined with the Institute's vision and mission of creating a sustainable society. The humble movement has been continuing since beginning within the country and beyond, with an objective to sensitize, motivate and equip everyone on the imperatives of sustainable development.

The 6th edition of Suscon: "Learning, Living and Leading" was successfully completed during 2nd-4th March 2017, with the hope and aspiration in 'making the earth a more livable planet', with the active support and assistance from many stakeholders of sustainability. The programme covered a total of 87 accepted paper presentation in 13 technical sessions encompassing 30 thematic areas of Sustainability and 5 plenary sessions with 204 accepted abstracts. We are really thankful to all those who has taken part in this noble cause and made it much stronger. Suscon-VI was possible only because of the faith and belief the IIM Shillong fraternity reposed under the able leadership of the Director, IIM Shillong. We are immensely thankful and grateful to our Director for his blessings and guidance to take forward Suscon as a movement. We express our sincere thanks to all the invited guests, keynote speakers and distinguished panelists for their intellectual contributions in Suscon-VI. Amongst them, few eminent speakers who enriched the conference are Padma Shri Jadav "Molai" Payeng, Forest Man, Jorhat, Assam; Shri Shankar Venkateswaran, Chief of Tata Sustainability Group, Tata Sons; Ms Stephanie Jill Hodge, CEO, UN Global; Lead Evaluator, UNDP and UN Projects, USA Mr David Raper; Lead, Corporate Citizenship, Asia Pacific & Greater China Group; IBM, USA; Dr Kalyan Chakravarthy Guntuboyina, Senior Researcher & Business Coordinator, Agroparks and Metropolitan Food Clusters Wageningen University and Research Centre, Netherlands; Mr Abhishek Ranjan, Global Head, CSR, Sustainability and BFSI Industry Marketing, Brillio Technologies; Mr. Rahul Bose, Global Solutioning CoE, IBM Global Business Services; Dr Subhas Sharma, Director - Indus Business Academy, Bangalore; Mr Madhuchandan, Organic Mandya, Bangalore; Dr.Varghese A Manaloor, John P Tandberg Chair in Eco & Management, Univ of Alberta, Canada; Mr P S Mallik, GM, Corporate Sustainability, CSR & EHS, L&T;

Our special thanks to Miss Rituparna Acharya, Project Research Fellow and Ms Emica Khonglah, MDP Officer in Charge and Ms Stephanie Nongkhlaw, MDP Office Colleague for their dedicated services throughout the conference processes.

We express our sincere thanks to our corporate partners *viz*. State Bank of India, Indian Oil, Larsen &Toubro, UCO Bank. for their generous supports, participation and sponsorships towards Suscon-VI. Behind every success there is a secret, so in Suscon-VI. 6-months long preparations and continuous engagement and deliberations amongst our committed faculty colleagues, dedicated PGP and FPM volunteers, officers and staff colleagues, through 12- subcommittees made it possible to organise this wonderful event at IIM Shillong. I must congratulate all the Scientific Committee members of Suscon-VI viz. Prof. Sanjita Jaipura, Prof. Khanindra Ch. Das, Prof. Arindum Mukhopadhyay, Prof. Bidyut Jyoti Gogoi and Prof. Mousumi Bhattacharya for their all-out supports and contribution to bring out this proceedings.

We convey our heartfelt thanks to each of them. The present volume of Suscon proceedings is the culmination of 22- selected peer reviewed papers out of total 83 papers presented in the conference. We congratulate all the delegates who have participated and presented their research findings in the conference and to those in particular, whose papers are selected in this Conference Proceedings volume. I wish the all the papers will open up new vistas and insights on sustainability before us and encourage us to contribute through further research. This proceeding may not be a mere volume in the library but a learning journal for all interested to join in the movement towards Sustainability and 'making the planet earth more livable'.

Dr Tapas Kumar Giri
Suscon-Co-chair and
Chairman: Scientific Committee

Contents

Re-examining Some of the Foundations of the Existing Modern Economic Institutions in the Light of Achieving the SDGs

Usha Jumani[1]
Independent Research Scholar

Abstract

The Sustainable Development Goals (SDGs) adopted by the United Nations in September 2015 will become the basis for templates of sustainability which will be used by all actors for the next 15 years.

Is it possible to achieve the SDGs within the framework of the existing modern economic institutions which the SDGs seem to take as a given? The directions which are emerging to achieve the SDGs are basically tweaking the system and nudging it to address the challenges which have been captured by the SDGs. That these challenges themselves are a corollary of the existing modern economic institutions is not discussed or taken into account. It is important and necessary to re-examine some of the foundations of the existing modern economic institutions and understand the role they play in achieving the SDGs, which this paper proposes to do, and argues for a paradigm shift in them.

Keywords

sustainability, Sustainable Development Goals (SDGs), foundations of existing modern economic institutions

Introduction

The United Nations adopted 17 Sustainability Development Goals (SDGs) in September 2015. These SDGs, which will become the basis for templates of sustainability which will be used by all actors for the next 15 years from 2015-2030 – at the international, national, and grassroots levels – are listed below:

1. End poverty in all forms everywhere.
2. End hunger, achieve food security, improve nutrition and promote sustainable agriculture.
3. Ensure healthy lives and promote wellbeing for all at all ages.
4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.
5. Achieve gender equality and empower all women and girls.
6. Ensure availability and sustainable management of water and sanitation for all.
7. Ensure access to affordable, reliable, sustainable and modern energy for all.
8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.

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9. Build resilient infrastructure, promote inclusive and sustainable industrialisation and foster innovation.
10. Reduce inequality within and across countries.
11. Make cities and human settlements inclusive, safe, resilient and sustainable.
12. Ensure sustainable consumption and production patterns.
13. Take urgent action to combat climate change and its impact.
14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development.
15. Protect, restore and promote sustainable use of territorial eco-systems, sustainably manage forests, combat desertification and halt and reverse land degradation and halt biodiversity loss.
16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels.
17. Strengthen the means of implementation and revitalise the global partnership for sustainable development.

The SDGs capture the challenges facing us—the challenge of exclusion from the benefits of development, the challenge of deprivation from the basic requirements of a healthy and useful life, the challenge of ecological disaster, the challenge of social and economic exploitation, the challenge of various types of inequity and inequality within and between countries, the challenge of institutional capture and dysfunctionality being experienced by large numbers of people of the world today. How did we reach this state of affairs? What kind of growth and development has happened that we are faced with these challenges? On the one hand there is obscene material wealth in the world today and never before in human history have so many people lived so well. And on the other hand there is obscene poverty and deprivation co-existing with obscene material wealth. This paper argues that the foundations of modern economic institutions are at the root of the growth and development that have happened over the past 200 odd years leading to the present challenging realities facing humankind. These foundations need to be re-examined if the challenges captured by the SDGs have to be addressed effectively. A historical process analysis of the emergence and evolution of the modern economy to its present state and the incumbent challenges facing us is attempted. Some recommendations are made to suggest directions of change which may facilitate the achievement of the SDGs.

The Beginnings of the Modern Economy

The emergence of the modern economy can be traced to the industrial revolution in the late eighteenth century in Britain. Deepak Nayyar (2009 & 2013) has analysed this process with data to show that geography divided the world in the period before the nineteenth century and economics divided the world subsequently and thereon how the industrial revolution introduced the possibilities of a structural transformation in the world economy. A brief summary of the key points of his analysis, linking his own sentences, is given here.

The evolution of the international economic order as it unfolded over the years 1820 to 1950 AD, led to the division of the world into industrial countries which specialised in manufacturing and agricultural countries which specialised in primary commodities. It was attributable to three developments which overlapped and partly coincided in time—the industrial revolution in the late eighteenth century, the newer and different form of colonisation in the early nineteenth century which culminated in the advent of imperialism, and the revolution in transport and communication in the mid-nineteenth century which manifest in the railway, the telegraph and the steamship — and transformed the world economy by creating patterns in production associated with a division of labour through trade reinforced by the politics of imperialism. The world economy was divided into countries that industrialised and exported manufactured goods and countries that did not industrialise and exported primary commodities. Slowly but surely, countries in Asia, Africa and Latin America became dependent on the industrialising countries in Western Europe not simply for markets and finance but also as their engine of growth. This led to deindustrialisation and under development in the developing world, just as it led to industrialisation and development in what became the industrialised world. Both processes were an integral part of the process of capitalism in the world economy. It would seem that over these 130 years, Western Europe and North America pulled away from the rest of the world, which was attributable in large part to sustained productivity growth in Western Europe which started a little later in North America.

Nayyar documents that prior to this period, from 1000 to 1500 AD, the shares of Asia, Africa, Latin America together in world income were similar to their shares in world population, which was around 75-80%, while that of Western Europe, Eastern Europe, North America, Oceania, and Japan together was around 20-25%. Between 1500 and 1700 AD their proportionate shares of world population remained roughly the same but the respective shares of these groups of countries in world GDP changed to around 66% and 34%. The structural transformation from 1820 AD onwards changed these shares greatly. By 1870 AD, the share of developing countries in world population had already decreased to two-third while the share of industrialised countries had increased to one-third. And the share of developing countries in world income had fallen to 43% while that of industrialised countries had risen to 57%. This trend continued over the 130 year period. The per capita incomes of the developing countries between 1820 and 1950 AD, as a percentage of GDP per capita in W. Europe, N. America and Oceania taken together also dropped - the per capita GDP of Latin America dropped from three-fifth to two-fifth, in Africa it dropped from from one-third to one-seventh, and in Asia it dropped from 1/2 to one-tenth—widening the gap in per capita incomes between the developed world and the industrialised world.

Between 1950 and 1973 AD the share of developing countries in world population began to rise again from 67% to 72.5% while their share in world income stopped its decline and rose modestly from 27% to 28.5%. In the period 1973 to 2001, this trend started to change with the share of Asia in world income slowly increasing, and this has continued to increase since then.

Nayyar goes on to analyse the gap between the rich and the poor countries. The ratio of GDP per capita in the 20 richest countries to GDP per capita in the 20 poorest countries of the world rose from 54:1 during 1960-62 to 121:1 during 2000-02. The ratio of GDP per capita in the richest country to GDP per capita in the poorest country of the world, in current prices at market exchange rates, rose from 119:1 in 1970 to 371:1 in 1990 to 916:1 in 2010; and in 1990 international (Geary-Khamis PPP) dollars, it increased from 38:1 in 1970 to 53:1 in 1990 to 125:1 in 2008.

In 2015, the size of the global economy was USD 73.89 trillion and the global population was 7.3 billion people.

The Foundations of Modern Economic Institutions

What are the economic institutions that have made this modern economy possible? The open market economy of capitalism and the centrally planned economy of socialism have developed as systems of operationalising the modern economy through democratic governments, socialist governments, monarchies, and dictatorships. The open market economy has factor markets (land, labour, capital) and product markets (demand and supply of goods and services) based on private property rights, free markets, and competition with a regulated framework set by government. The centrally planned economy has state ownership of property and controlled markets with government regulation on all aspects of the economy. Without going into the detailed analysis of various modern economic institutions, this paper is trying to focus on the underlying processes of change which developed the modern economy and which the author is referring to as the foundations of the modern economic institutions (notwithstanding the other technical usages of the phrase 'foundations of economic institutions' which are not taken into account here). The broad contours of these processes of change are described next.

Industrial production of goods involved mass production in factories making possible large scale of operations through economies of scale, which in turn led to large need of raw materials and large need of markets. Large scale of operations also required large scale of capital mobilisation and needed new forms of organising work and production processes to ensure uninterrupted production. The market economy promoted the increase in commercial basis of various life transactions, leading to unlocking of value by making monetising the norm—monetising of natural resources, of book value of assets and businesses as well as of market value, of family and community bonding and cohesion. Emergence and development of fractional reserve banking became the channel for mobilising savings of people to lend to business and individuals as loans. The institutional innovation of the joint stock company form for business and entrepreneurship which evolved into the joint stock company with limited liability and further into the listed, joint stock company with limited liability increasingly covered more and more business activity. The concept of limited liability spread to limited liability partnership forms and then to one person company forms of business. The stock market as an institution for mobilising capital from the public became an important source for the flow of money to business. The stock exchange and stock market as the definer of economic value of business led to the emphasis on market capitalisation as size of business and trade grew rapidly. Metrics to underline the centrality of market capitalisation of business developed. Industrial provision of services followed the practices of industrial production of goods. Credit and consumption led economic growth models developed. Urbanisation and employer-employee relationship for the majority of the working population became stronger. The employer-employee relationship became incentivised through life-long employment assurances, decent remuneration and working conditions, a variety of perquisites, retirement benefits. The share of agriculture in GDP and employment fell while that of manufacturing increased which in turn was replaced by increasing share of services in GDP and employment. Separation of labour and capital, control and ownership, savers and borrowers, real wealth and virtual wealth have helped to create unprecedented scale of operations, scale of profits, and scale of dominance of business organisations in society. Venture capital, private equity, hedge funds linked to the stock market support technological innovations and entrepreneurship for new businesses. Mergers and acquisitions open the doors for inorganic growth of business. Pension funds and insurance business are linked to the stock markets. Virtual wealth and financialisation of the economy are the logical progression of this cumulative set of forces over a period of 200 odd years as their geographical spread increased, fueled by the forces of globalisation. International and inter-governmental organisations become the fora for negotiation and regulation of business, finance, and of the directions of development itself. All this together slowly increased the levels of economic and ecological unsustainability as they spread globally and changed the landscape of work as well as the use of natural resources. Mechanisation of production processes, mass production of goods, automation of production, and then digitisation of production are successively referred to as the first, second, third and fourth industrial revolution as all these processes intensified and newer technologies emerged.

Some of the foundations of the modern economic institutions which were critical drivers of these change processes can be culled out as the following:

- Market economy
- Listed, limited liability, joint stock company as the form of business organisation
- Industrial production of goods and provision of services
- Fractional reserve banking and the stock markets as the financial architecture
- Urbanisation
- Relative shares of agriculture, manufacturing, and services in GDP and in employment
- Employer-employee relationship with full benefits protected by law

'Progress' and 'development' of modern living patterns is thus of recent origins — viz. the past 200 odd years. And the challenges captured by the SDGs are also of similar vintage.

Ecological Damage of the Modern Economy

The role of machine energy in the economic growth models of industrialisation and urbanisation, dependence on fossil fuels for economic growth, equating progress with higher and higher levels of machine energy consumption has led to over-exploitation of natural resources and the unsatiable greed for profits has led to over-consumption of goods and services which all add up to unsustainable levels of green house gas emissions, global warming and climate change.

Scientific, recorded evidence now shows that human activity, predominantly the economic system, is responsible for changes in the Earth System which is constituted of our planet's interacting physical, chemical, biological and human processes. A set of 24 global indicators – 12 of which are socio-economic trends (world population, real GDP, foreign direct investment, primary energy use, large dams, water use, fertilizer consumption, paper production, urban population, transportation, tele-communications, international tourism) and the other 12 are earth system trends (carbon dioxide, nitrous oxide, methane, stratospheric ozone, surface temperature, ocean acidification, marine fish capture, shrimp aquaculture, coastal nitrogen, tropical forest loss, domesticated land, terrestrial biosphere degradation) — reflect through graphs the trend and impact of human activity from the start of the industrial revolution till 2010. The post 1950 acceleration in all of these 24 indicators is called as the 'Great Acceleration' and dramatically captures the increase in green house gas levels, rise in sea levels, ocean acidification, the global mass extinction of species, bio forestry deterioration, and the transformation of land by deforestation and development. (*www.anthropocene.info*). The subsequent changes in the structure and functioning of the Earth System are attributed to human impact on the earth, which is now so profound that a new geological epoch needs to be declared — the Anthropocene — according to an expert group recommendation submitted to the International Geological Congress in 2016, to succeed the Holocene. The current epoch is the Holocene which is the 12000 years of stable climates since the last ice age during which all human civilisation developed.

This is the extent of ecological damage caused by the modern economy. The economic system responsible for this is largely modern business organisations and their functioning.

Modern Business Organisations

Business organisations are a part of the existing modern economic institutions and they are also one of the key actors in achieving sustainability. The way business has used the natural resources of the earth to generate money profits is reflected in the graphs referred to in the previous paragraph. The 'Great Acceleration' since 1950 till today is ecologically unsustainable and can be called 'business as usual'. Actions of moving business towards sustainability can be grouped into (i) tweaking 'business as usual' to give it a sheen of sustainability, (ii) circular economy initiatives which imply some rethinking about the way business is done, and (iii) fundamental changes in the way business is done to make it 'business unusual' and become truly sustainable business. 'How profits are made' in the 'business as usual' paradigm has created many negative social, economic, and ecological consequences which have led to the concerns of 'what the profits are used for' and the concomitant concepts of social responsibility of business. Both these aspects of 'how profits are made' and 'what the profits are used for' flow from the foundations of existing modern economic institutions and there is considerable divergence between the stated objectives of both these aspects. The objective of 'How the profits are made' drives business more and more in the direction of maximising profits without much concern about the social and ecological damage. The objective of 'what the profits are used for' makes business take initiatives for undoing the social and ecological damage happening from its profit making activities. Thus the same business organisation becomes Janus-faced with one face contributing to damage and the other face trying to nullify the damage.

Circular business initiatives make some attempts to rethink the way business is done in restorative and regenerative ways vis-à-vis natural resources to make profits and also to use the profits for the larger benefit of society. This is a positive step in the direction of sustainability but the circular economy initiatives still seek to function within the parameters of the economic institutions which define the ownership of business and the valuation of business in the form of listed, limited liability joint stock companies, that is, without questioning the forces of financialisation. (The next section elaborates the consequences of financialisation of the economy). To that extent, the impact of the circular economy initiatives on sustainability is limited.

Fundamental changes in the way business is done involve combining the restorative and regenerative ways of the circular economy as well as the tenets of the stakeholder perspective to maximise societal value-added rather than just share holder value-added. The divergence between 'how profits are made' and 'what the profits are used for' by business is sought to be increasingly reduced and eventually eliminated, leading to 'business unusual'. Such a paradigm shift is possible by a re-examination of the foundations of existing modern economic institutions.

Cooperatives, mutual benefit organisations, community based organisations, self-help groups engaged in business are trying to operate on different principles but they are also beginning to be drawn into the currents of financialisation. Cooperatives are finding ways of morphing into hybrid organisations which have linkages to investor-owned organisations and are seeking to be listed on the stock markets, self-help groups based businesses are morphing into listed, joint stock companies with limited liability.

Such moves do not facilitate the re-examination of the foundations of existing modern economic institutions.

Financialisation of Business and the Economy

The modern economy has shifted its focus to industrial provision of services so the share of services in GDP and in employment has increased to nearly 70-80% in the highly industrialised countries of the West. Within this, financial services are a dominant component. The countries of the rest of the world are also moving in this direction but their share of services in GDP is increasing without a similar increase in share in employment.

The Great Recession — as the financial crisis of 2007-08 is called — has drawn critical attention to the malaise of financialisation in the modern economy, especially in the economies of America and Europe. Some authors have analysed the causes of this in recent works. Two of them are quoted here a bit at length to capture the negative fallouts of financialisation.

Adair Turner (2015, p.20) describes the role of finance as, 'Finance has grown more rapidly than the real economy since modern capitalism first developed in the nineteenth century. Analysis by Andrew Haldane shows finance in the United Kingdom growing on average by 4.4% from 1856 to 2008, while the economy grew at 2.1%.... The U.S. experience was similar. Between 1850 and the crash of 1929, finance's share of national income grew from 2% to 6%, with a particularly sharp increase throughout the 1920s. That share collapsed in the 1930s and even in 1970 stood at a significantly lower 4%. From 1970 to 2008 it more than doubled. In 2007 finance played a bigger role in advanced economies, as measured by share of GDP, than ever before.'

He analyses the functioning of banks as well as the shadow banking system and their role in the financialisation of the global economy and refers to debt as a form of economic pollution which gets worse with a more complicated and sophisticated debt creation engine, which is what modern financial markets have become. Describing the risks involved in the modern banking system, he says, 'The dangers of excessive and harmful debt creation are inherent to the nature of debt contracts. But they are hugely magnified by the existence of banks, and by the predominance of particular categories of lending. Read almost any economics or finance textbook, and it will describe how banks take money from savers and lend it to business borrowers, allocating money among alternative capital investment projects. But as a description of what banks do in modern economies, this is dangerously fictitious for two reasons. First, because banks do not intermediate already existing money, but *create* credit, money, and purchasing power which do not previously exist. And second, because the vast majority of bank lending in advanced economies does not support new business investment but instead funds either increased consumption or the purchase of already existing assets, in particular real estate and the urban land on which it sits.' (p. 6)

The dramatic growth in financial services since 1970 due to innovations in financial instruments such as securitisation and derivatives and more complex instruments based on derivatives of derivatives which led to the growth of intrafinancial system assets is illustrated by him as, 'Financial institutions buy and sell financial instruments back and forth between each other to a far greater extent than they did 40 years ago, and financial trading has grown dramatically relative to underlying real economic flows. The value of oil futures trading has gone from less than 10% of physical oil production and consumption in 1984 to more than 10 times that of oil production and consumption now. Global foreign exchange trading is now around 73 times global trade in goods and services. Trading in derivatives played a minimal role in the financial system of 1980, but now it dwarfs the size of the real economy; from zero in 1980, the total notional value of outstanding interest rate derivative contracts had soared by 2007 to more than $400 trillion, about nine times the value of global GDP.' (p. 25). This growth has steadily led to a divergence between the value of real assets (the real economy) and the value of the financial assets (the virtual economy), which is also called as the divergence between Main Street and Wall Street.

Turner berates the discipline of modern economics in this context, 'At the core of macroeconomic instability in modern economies lies the interaction between the limitless capacity of unconstrained private banking and shadow banking systems to create credit, money, and purchasing power, and the inelastic supply and rising demand for locationally specific urban land. Most modern macroeconomics has failed to focus on this interaction. That is in large part because it was uninterested in the empirical reality of what banks actually do.' (p. 247)

Rana Foroohar (2016, p.7) analyses the causes and consequences of financialisation to show how the financial services sector in the modern economy is taking from the economy and benefiting itself at the cost of those who do the real work of making things in the rest of the economy in the context of America. She says, 'The unchecked influence of the financial industry is a phenomenon that has played out over many decades and in many ways. So what is so urgent about it now? For one, the fact that we are in the largest and weakest economic recovery of the post-World War II period, despite the trillions of dollars of monetary and fiscal stimulus that our government has shelled out since 2008, shows that our model is broken. Our ability to offer up the appearance of growth — via low interest rates, more and more consumer credit, tax-deferred debt financing for businesses, and asset bubbles that make us all feel richer than we really are, until they burst — is at an end. What we need isn't virtual growth fueled by finance, but real, sustainable growth for Main Street.

To get there, we need to understand the key question, which is really quite simple: How did finance, a sector that makes up 7% of the economy and creates only 4% of all jobs, come to generate almost a third of all corporate profits in America at the height of the housing boom, up from some 10% of the slice it was taking twenty-five years ago?'

She describes the tactics of financial engineering which large modern business corporations are indulging in to enrich themselves and their investors versus engaging in real engineering leading to high turnover in trading of company shares, 'Today 70-80 percent of all trading is done by computers, much of it using flash programs designed to trade on fractional price changes over split-second time intervals, reducing the average holding period of a stock from about eight years in the 1960s to just four months by 2012.' (p.113).Foroohar further elaborates some of the changes in the functioning of large business organisations to boost profits, 'And back in the late 1970s, behavioural economics was a nascent idea, while efficient markets theory ruled. Its ascension eventually led another pair of Chicago-educated academics, Michael Jensen and William Meckling, to develop a management framework that would further reshape both business education and the corporate landscape: agency theory, or the notion that managers should be treated like owners, and paid in stock, to boost corporate performance.' (p. 104)

Foroohar goes on to explain how the agency theory led to the introduction of employee stock options in managerial remuneration, 'There was a particular concern that large, complex, and diversified organisations had given rise to a divergence of interests between managers and shareholders; indeed, many economists considered that gap to be the root of America's declining competitiveness. While the former, who were basically trained to be pliant company men, could take it easy and be guaranteed lifetime employment in large corporate bureaucracies, the latter were losing ground as profits and shares fell. The solution: align the incentives of the two better by rating managers on a very specific set of financial metrics, and pay a greater percentage of their salaries in stock options. Boards would watch over the managers, making sure they did whatever was designed to boost share prices. Never mind that these theories were cooked up in college classrooms and on computers rather than in real businesses.' (p. 105)

Financialisation thus acts to increase the divergence between the real and the virtual economy. It does damage by combining elements of two different systems of business functioning — the full liability forms of business and the limited liability forms of business — through ESOPS which only increases rash risk taking behaviour for short term benefit of owners, in the form of employees and investors, at the cost of the other stakeholders of a business and of the economy and society as a whole and increases their vice like grip over the whole economy. Financialisation is also one of the root causes of growing economic inequalities in the world today. The latest Oxfam Report (2017) — 'An Economy for the 99%' — says that just eight men own the same wealth as the 3.6 billion people who make up the poorest half of humanity. With this kind of concentration of wealth and control over the global system, big business only perpetuates itself. This has serious implications for the achievement of the SDGs.

The SDGs, Business Organisations, and Financialisation

In one sense, the SDGs are a response to the realisation that the present relationship of human beings with nature needs to be recalibrated. Understanding nature to control nature and/or to exist in harmony with nature are the options for the long term survival of the human race. Human history of the past 200 odd years is a testimony to the efforts of human beings to increasingly control nature through technological advances which have become integrated into the economic institutions that have evolved to constitute the modern economy. 'Business as usual' and the modern economy have become part of a mutually reinforcing loop which has led to the present state of unsustainability of life and life systems. Achieving the SDGs and moving towards sustainability is dependent on the extent of the paradigm shift achieved in the foundations of the existing modern economic institutions such that it will enable human beings to exist in harmony with nature rather than to control nature.

The seventeen SDGs capture very well the major challenges facing humankind today in the face of tremendous strides for improvement made on practically every facet of human existence. The challenges of living within the bio-capacity of the natural resources of planet earth, the imminent negative consequences of climate change, and the glaring gaps in coverage in different parts of the world of the basic requirements for wholesome human existence are very major and have put human existence itself at a major crossroad in the march of life.

But the plan of action to achieve the SDGs appears to be to nudge the modern economy to respond to these challenges without questioning its own role in contributing to the creation of these challenges. The interests, incentives, and institutions for business in the modern economy are presently aligned towards financialisation which is going to become an impediment to the achievement of the SDGs. They have to be realigned to promote sustainability of life and life support systems.

Eight of the seventeen SDGs (number 1, 3, 4, 5, 6, 7, 8, 16) refer to 'all' — meaning that the concerned goal aims to reach all people on earth, address a specified reality everywhere in every form.

How is it possible to achieve these SDGs by continuing with 'business as usual'?

The following grid in Table 1 is helpful in understanding how we need to change orientations, systems, metrics, and values to move towards sustainability.

Table 1: Equitable Growth, Sustainable Growth

	All	Some	None
Potential			
Aspiration			
Hedonism			

If the potential of all people has to be realised, then how will the aspirations of all people be met? If the emphasis on hedonism is promoted aggressively in the name of economic growth and progress, then is it possible to live sustainably within the bio-capacity limits of the earth and still achieve hedonism for all? These are the issues which have to be addressed if the SDGs are to be successfully realised.

What benefits of development and progress are intended for all people, for some people, and for none of the people has to be decided with the active involvement of all stakeholders in society in the process of redefining the path of economic development and moving towards holistic living and sustainability.

Table 2 below lists 12 needs which are required by all people. The linking of these to the market economy and to the process of financialisation has created its own pressures on the eco-systems.

Table 2: Needs for All

ROTI {FOOD}	*KAPDA* {CLOTHING}	*MAKAAN* {HOUSING}
BIJLI {ELECTRICITY—ENERGY}	*SADAK* {ROAD}	*PAANI* {WATER (includes sanitation)}

SWASTHYA {HEALTH}	*PADHAAI* {EDUCATION}	*ROZGAAR* {LIVELIHOOD}
MANORANJAN {ENTERTAINMENT}	*MADHYAM* {MEDIA}	*SANCHAR* {COMMUNICATION}

The realignment of incentives, interests, and institutions has to take these 12 needs into account as the basis for wholesome living for all people. A ring-fencing of these 12 needs is called for to protect people from the malaise of financialisation for meeting their basic needs at least.

Eleven of the seventeen SDGs (number 2, 6, 7, 8, 9, 11, 12, 14, 15, 16, 17) refer to 'sustainable' growth, use of natural resources, energy, consumption, production, development, agriculture, industrialisation, cities and human settlements. Four of these are common to the eight SDGs referring to 'all' (numbers 6, 7, 8, 16).

Is it possible to achieve these by continuing with 'business as usual'?

M.S. Swaminathan (2010) speaks of Bio-Happiness and says the interplay between cultivation, conservation, commerce, and consumption has to be redefined in the context of sustainability. The market economy and commercial basis of life transactions has led to the present permutations and combinations of cultivation, conservation, commerce, and consumption which add up to one kind of economy and culture – the likes of the modern economy. The SDGs call for another kind of economy and culture which is possible by recreating subsistence-cum-commercial basis of life transactions which will lead to different permutations and combinations of cultivation, conservation, commerce, and consumption.

What types and forms of work enable people to be grounded in nature and understand nature as a way of life? What types of work enables maximum numbers of people to be directly linked to nature for sustenance? What kind of work and economic activity maximises real valuations as compared to virtual valuations? Which integrates risk-taking with day-to-day living for maximum numbers of people? Which balances use of muscle energy and machine energy for maximum numbers of people? Ways and means for rebalancing the trajectory of growth and development to create equal shares of agriculture, industry, and services in GDP and in employment is needed. The gap between high and low consuming nations has to reduce to reach a new equilibrium of consumption of natural resources by all, in harmony with nature.

Fundamental Changes Needed in the Way Business Is Done

The following ideas are put up as recommendations to redefine the nature of business in the light of achieving the SDGs.

1. Differentiate between needs and wants to focus on needs rather than wants thereby reducing hedonistic pressures. Promote realistically achievable aspirations.
2. The share of the market economy in the economic activity of society to be reduced. Consumption and credit led growth models to be replaced by consumption and conservation led growth models. Change in the individuals, interests, incentives, institutions alignment to put a premium on conservation rather than on consumption
3. Equal shares of agriculture, industry, and services in GDP and in employment.

4. The power of aggregation to benefit the majority through people owned businesses. A shift is needed from investor owned business towards member owned business. The shares of proprietory and partnership business, jointly owned by members business, and investor owned business to be in equal proportion in the economy in terms of contributing to GDP. Full liability or unlimited liability businesses to dominate the economy compared to limited liability business.
5. The percentage of people with an employer-employee relationship to reduce and buyer-seller relationships to be promoted for the majority.
6. Change in the present metrics and develop new metrics for measuring performance of business. Reduce the weightage on profits and market capitalisation values in the metrics of business performance. Develop business performance metrics which simultaneously measure:

   - Efficiency of increasing GDP growth
   - Efficiency of increasing well-being
   - Efficiency of increasing ecological balance
   - Efficiency of increasing sense of community bonding
   - Efficiency of increasing sustainability of life and life systems

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