

SUSTAINABILITY

Inspiration, Innovation and Inclusion

*Proceedings of the 5th Annual International
Conference on Sustainability - SUSCON V*

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Message from Director

Sustainability is most often misinterpreted by many with environmental preservation or green business. However, sustainability is beyond mere fiscal economic growth, it encompasses healthy living for all in a healthy and enabling environment, where there are no sufferings from multidimensional poverty and inequality, injustice, and power imbalance; where empowerment of the weaker section at the bottom of the pyramid, health, education, and employment opportunities for all, are as important as maintaining 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 we at IIM Shillong cherish the vision of 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 toward the bottom of the pyramid and the underprivileged sections of the society. I am happy to present the proceedings of SUSCON-V: Inspiration, innovation, and inclusion, the fifth annual international conference of IIM Shillong on sustainability which was dedicated to the former President of India, Bharat Ratna Dr. A P J Abdul Kalam, who graced the previous edition of SUSCON-IV: People, planet, and policy as the Chief Guest. I must congratulate my colleagues in the SUSCON Organizing Committee for successful completion of the conference and bringing these selected papers volume published. The papers in this proceedings are selected based on peer and blind review out of 83 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 to 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.

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Wish all happy reading!!!

Prof. Amitabha De

SUSCON V Chair Speaks

SUSCON at IIM Shillong is not just an annual conference, but a movement to make our organizations, society, and the planet a better place to live in. Intense involvement in this movement for 5 years has opened up new doors of perception and ushered in fresh insights into the theme and the processes. There have been some powerful voices against the overall effectiveness and impact of Rio movement spaced 20 years between Rio summit and the Rio+20 summits. The hard truth has now dawned on many thinkers and practitioners that sustainability is not a matter of calculations, publicity gimmick, or temporary engagement. If the academic and business community as well as the Government, NGOs, and civil society groups are really serious about the issue of sustainability, then one must delve into the exploration of the very roots from where the concern for sustainability emerges. The source of all sustainability lies in the origin of inspiration that springs forth from the hearts of responsible and conscientious human beings and the enlightened minds of the visionary leadership in any field of endeavour.

In the face of adverse economic realities and sharp criticism from the strong advocates of market economy and bottom-line priorities, it is the power of inner inspiration that keeps the movement of sustainability going and growing against these formidable “pragmatic” forces which champion the cause of techno-economic development, following the gospel of linear and undifferentiated growth. The fire of inspiration within then ignites our creative energy and finds expression in meaningful innovation. It compels us to innovate new processes and methods, beyond the stereotyped mainstream formulae, to resolve the problematic issues around sustainability covering its multiple dimensions—individual, organizational, social, environmental, cultural, and planetary. The individual consciousness, thus, spreads from the domain of micro issues and local concerns to embrace the macro level in the global arena in a spirit of inclusion. The philosophy and practice of expansion and transformation of consciousness “From Me to We” thus becomes a reality.

Therefore, the Fifth Annual International Sustainability Conference of IIM Shillong weaves around these three main themes—Inspiration, innovation, and inclusion for a better tomorrow for every human being and the planet at large. This year the Conference comes as a tribute to the Bharat Ratna Dr. A P J Abdul Kalam, former President of India, who inaugurated SUCON III in March 2013. His presence at SUSCON gave a tremendous inspirational momentum to the sustainability movement in IIM Shillong. It was at IIM Shillong that this great son of India breathed his last while lecturing to our students on “Creating a Livable Planet Earth.”

Dr. Sanjoy Mukherjee
Chairman: Organizing Committee

Acknowledgment

SUSCON—the annual international conference on sustainability is one of the important events of IIM Shillong that was started in 2010 as a mission mode and the movement has been continuing since then within the country and beyond, with an objective to sensitize, motivate, and equip everyone on the imperatives of sustainable development.

The fifth edition of SUSCON: Inspiration, innovation, and inclusion was successfully completed during 17–19th March 2016, 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 program covered a total of 98 accepted paper presentation in 15 technical sessions, encompassing 32 thematic areas of sustainability and 5 plenary sessions with 227 accepted abstracts. We are really thankful to all those who have taken part in this noble cause and made it much stronger. SUSCON-V was possible only because of the faith and belief the IIM Shillong fraternity reposed under the able leadership of Prof. Amitabha De, Director, IIM Shillong. We are immensely thankful and are also grateful to the Director for his blessings and guidance to take forward SUSCON as a movement, and express our sincere thanks to all the invited guests, keynote speakers, and distinguished panelists for their intellectual contributions in SUSCON-V. Among them, few eminent speakers who enriched the conference are Dr Daniel S. Helman, California, USA; Prof. Manas Chatterjee, Binghamton University, New York, USA; Shri Bimal Arora, Chairperson—Centre for Responsible Business, UK; Prof. Sarit K. Das, Director, IIT Ropar, Prof. Sankarshan Basu, IIM Bangalore; Prof Biswatosh Saha, IIM Calcutta; Dr. Madhumita Chatterji, Director, IFIM Bangalore; Shri Ashish Gupta, IAS, Joint Secretary, Ministry of Home affairs, GOI; Ms Sapna Poti, Head of North East, National Skill Development Corporation (NSDC), and Mr Biren Bhuta, Chief of CSR, Tata Steel.

We express our sincere thanks to our corporate partners *viz.* State Bank of India, Indian Oil, Gas Authority of India Ltd. for their generous supports, participation, and sponsorships toward SUSCON-V. Behind every success there is a secret, as was visible in SUSCON-V-6-month long preparation, continuous engagement and deliberations among our committed faculty colleagues, dedicated PGP and FPM volunteers, officers and staff colleagues, through 12-subcommittees made it possible to organize this wonderful event at IIM Shillong. I must congratulate all the Scientific Committee members of SUSCON-V *viz.* Prof. Sanjita Jaipura, Prof. Khanindra Ch. Das, Prof. Arindum Mukhopadhyay, Prof. Bidyut Jyoti Gogoi, and Prof. Mousumi Bhattacharya for their support and contribution to bring out these proceedings.

We convey our heartfelt thanks to each of them. The present volume of SUSCON proceedings is the compendium 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. We sincerely wish that all the papers will open up new vistas and insights on sustainability and encourage us to contribute through further research. This proceeding is not to be a mere volume in the library but a learning journal for all interested to join in the movement toward sustainability and “making the planet earth more livable.”

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Three Dimensional Frameworks versus Two Dimensional Frameworks as a Design Approach towards Sustainability

Usha Jumani*
Independent Research Scholar

Abstract

Analysis of country level data of the United Nations Development Programme (UNDP) and the Global Footprint Network on Gross National Income (GNI), Human Development Index (HDI), and Global Hectares (GHA) using two versus three dimensional frameworks illustrates Medium GNI, High HDI and Low GHA as the aspirational focus for all countries to grow and develop in a sustainable way.

The 'citizens', 'consumers', and 'communities' roles of people with the state, market, and people as the corresponding players is presented in a three dimensional framework to understand state, market, and people success/failure compared to the commonly used two dimensional framework of state and market success/failure.

Keywords

Sustainability, Three Dimensional Frameworks, Two Dimensional Frameworks, Communities, People Failure/Success

Introduction

The ways, in which individuals, groups, organizations, and societies utilize various types of resources to nurture the potential of every human being, can become the basis of sustainability. This paper explores the contours of sustainability by comparing two dimensional and three dimensional frameworks of analysis, using country level data of the UNDP and the Global Footprint Network. It argues for the superiority of three dimensional frameworks and postulates them as a conceptual construct through the design approach towards sustainability.

The past 200 odd years in human history have been unique in many ways. The increase in human population, in consumption of natural resources, in national incomes, and in greenhouse gases emissions, are now at the highest levels in recorded history, with a sharp sustained spike in all four since around 1800 AD. This increase has been very unevenly distributed across countries leading to glaring differences between them in terms of incomes, consumption, and opportunities for nurturing the potential of their people, which raises policy concerns about the equitable use of natural resources to sustain all people in all the countries of the world.



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Methodology

The 3P Approach (adaptation of the Triple Bottomline Approach) has become one of the yardsticks of measuring balanced progress between People, Planet, and Profits. The most commonly used methods of measuring them at the country level are Gross National Income for Profits, Human Development Index for People, and ecological footprint in Global Hectares for Planet. These data are generated for most countries of the world by the United Nations and other international bodies.

The Data

The Human Development Report (HDR) prepared by the UNDP every year gives a value for the HDI along with the per capita GNI in USD for countries. The HDI score, which ranges from 0 to 1, is a cumulative score of a country's achievements on education, health, and income. The countries are classified as having Low HDI, Medium HDI, High HDI, and Very High HDI. This measure has been used for the P relating to People.

The World Bank classifies countries each year into Low Income, Lower Middle Income, Upper Middle Income, and High Income based on their per capita GNI. These categories have been used for the per capita GNI data provided in the HDR for each country. This measure has been used for the P relating to Profits.

The Global Footprint Network computes the per capita ecological footprint of countries in terms of Global Hectares (GHA) and publishes them as National Footprint Accounts (NFA) each year. This measure has been used for the P relating to Planet.

The HDR for 2011 and 2015, which is the most recent report, have reference years as 2011 and 2014, respectively. The most recent National Footprint Accounts 2015 Edition has GHA data for reference year 2011. Hence, data analysis using three data points for each country – HDI, per capita GNI, and per capita GHA – has been done separately for two years – 2011 and 2015.

There is some mismatch in the list of countries in the HDR and NFA. The HDR 2015 has data for 188 and the NFA 2015 for 182 countries. Twenty countries in the HDR do not figure in the NFA and 14 countries in the NFA are not there in the HDR. Hence, data for the common list of 168 countries in the HDR and in the NFA have been studied.

Within this list, the analysis has been done for countries with High and Very High HDI scores. The cutoff points for the HDI adopted by the UNDP are as follows:

- Score upto 0.55 – Low HDI
- Score between 0.56 to 0.69 – Medium HDI
- Score between 0.7 to 0.79 – High HDI
- Score between 0.8 and 1.0 – Very High HDI

The HDR 2015 shows 49 countries with Very High HDI and 56 countries with High HDI. Six countries each in the Very High HDI and High HDI list do not have corresponding GHA scores resulting in a total of 43 countries and 50 countries respectively in the data set.

The HDR 2011 has 47 countries with Very High HDI and 47 countries with High HDI. But three countries having HDI less than 0.8 are listed in the Very High HDI category and three countries having HDI less than 0.7 are listed in the High HDI category because the cut-off points used are different in that year. To maintain consistency, the HDI score of 0.8 and above has been used for Very High HDI and 0.7 to 0.79 has been used for High HDI countries in the 2011 data also. This results in 44

countries with Very High HDI and 47 with High HDI. Of these, six countries with Very HDI and four with High HDI do not have corresponding GHA scores, which results in a total of 38 countries and 43 countries respectively in the data set.

The 2014 and 2011 per capita GNI classification for countries by The World Bank is as follows:

2014		2011
Upto USD 1045	– Low Income	– Upto USD 1025
Between USD 1046 - 4125	– Lower Middle Income	– Between USD 1026 - 4035
Between USD 4126 - 12736	– Upper Middle Income	– Between USD 4036 - 12475
Above USD 12736	– High Income	– Above USD 12475

The World Economic and Social Prospects, 2014 document (United Nations, 2014) lists 36 countries including the European Union and other European countries, United States of America, Canada, Japan, Australia, and New Zealand as Developed Economies. Keeping the per capita GNI of these countries in view, which is much higher than The World Bank cut-off of USD 12736 for High Income, an additional category with a cut-off of USD 25000 has been added to The World Bank classification by the author in this paper and named as Very High Income group.

The Global Footprint Network calculates that a per capita ecological footprint of 1.7 GHA for all people on the earth would allow human beings to live within the bio-capacity of the earth meaning living within the equivalent of one earth. Presently, they estimate that the world is at an ecological consumption of 1.6 earth's level, with the footprint of humanity being 2.7 global average hectares per person. The number of earths required to sustain present ecological footprints of different countries has been used by the author to classify the per capita GHA categories as follows:

- Upto 1.7 per capita GHA – Low (equivalent of one earth)
- Between 1.8 to 3.4 GHA – Medium (equivalent of two earths)
- Between 3.5 to 5.1 GHA – High (equivalent of three earths)
- Above 5.1 GHA – Very High (equivalent of four earths and more)

The Data Analysis

Two dimensional frameworks have been used to create three graphs shown in Figures 1, 2, and 3 with data for reference year 2014 and three graphs shown in Figure 4, 5, and 6 with data for reference year 2011.

Figure 1 plots the HDI and per capita GHA scores of countries. Thirty out of 50 countries with High HDI have Medium per capita GHA, 9 have High per capita GHA, 2 have Very High per capita GHA, and only 9 have Low per capita GHA. These nine countries are Sri Lanka, Algeria, Jordan, Georgia, Dominican Republic, Columbia, Equador, Jamaica, and Cuba. Of 43 countries with Very High HDI, only 25 have High per capita GHA, 12 have Very High per capita GHA, and 6 have Medium per capita GHA. None have Low per capita GHA.

Figure 2 plots per capita GNI of the High and Very High HDI countries against their per capita GHA scores. Nine of the 50 High HDI countries have Low per capita GHA of which 8 are Upper Middle income countries and 1 is a High income country. Thirty High HDI countries have Medium per capita GHA with 15 of them being Upper Middle income and 15 being High income countries. Nine countries have High per capita GHA with 2 in the Upper Middle income, 6 in the High income, and 1 in the Very High income group. Two High HDI countries have Very High per capita GHA with 1 each in the High and the Very High income group.

Figure 1. Graph plotting countries with Very High HDI with reference to their Per Capita GHA.

Not to scale

X - V. High HDI Countries - 43 Countries Plotted
 O - High HDI Countries - 50 Countries Plotted

Human Development Report, 2015 for HDI and GNI data, Reference year 2014
 GNI categories as classified by The World Bank for 2014
 National Footprint Accounts 2015 Edition, for GHA data, Reference year 2011

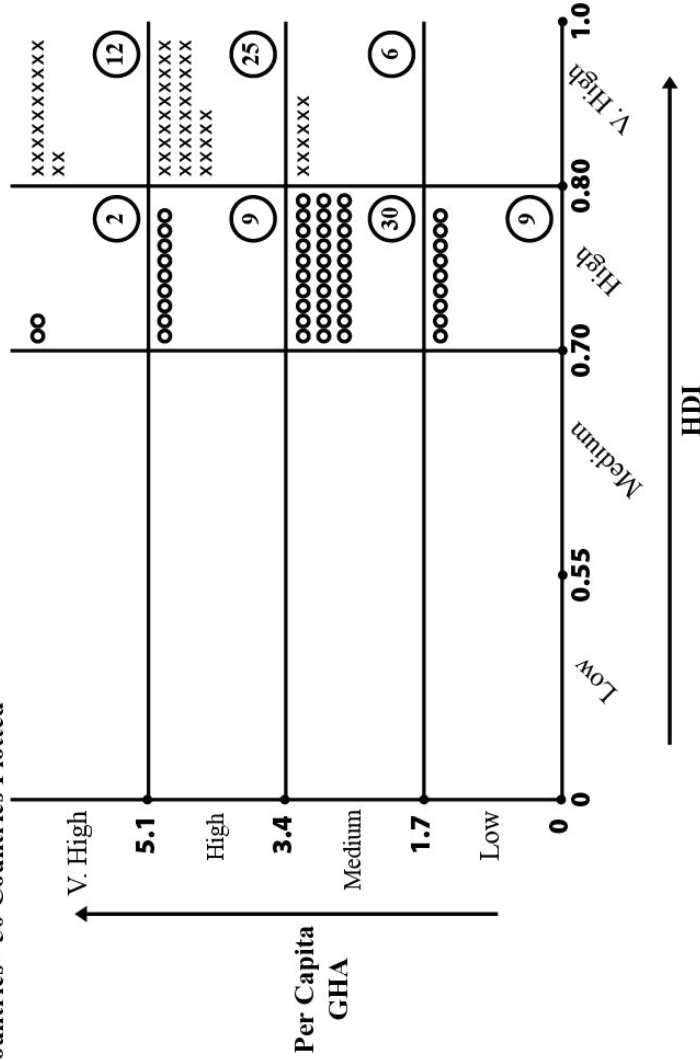
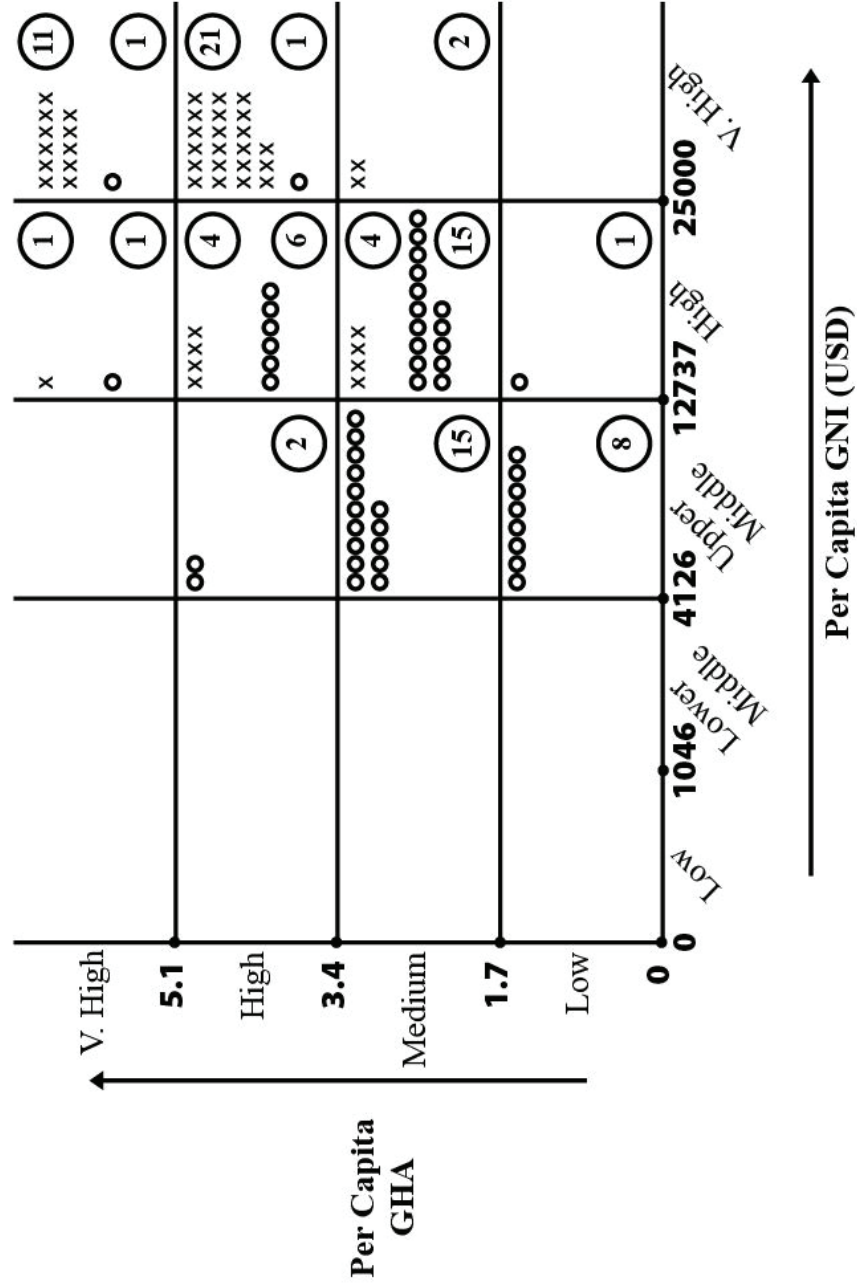


Figure 2. Graph plotting with Very high HDI with reference to their Per Vapita GNI and Per Capita GHA.



Twenty-five of the 43 countries with Very High HDI have High per capita GHA with 4 of them being High income and 21 being Very High income countries. Six Very High HDI countries have Medium per capita GHA with 4 in the High income and 2 in the Very High income group. Twelve Very High HDI countries have Very High per capita GHA with 1 being in the High income and 11 in the Very High income group. None of the countries with Very High HDI have Low per capita GHA.

Figure 3 plots the HDI and per capita GNI scores of countries. Twenty-seven of the 50 countries with High HDI fall in Upper Middle Income, 23 in the High Income, and 2 in the Very High Income group. Thirty-four out of 43 countries with Very High HDI fall in the Very High Income and 9 in the High Income group.

Figure 4 plots countries using their HDI and per capita GHA scores. Twenty-seven out of 43 of countries with High HDI have Medium per capita GHA, 8 have High per capita GHA, 3 have Very High per capita GHA, and 5 have Low per capita GHA. These five countries are Georgia, Cuba, Jamaica, Ecuador, and Columbia. Twenty-three of the 38 countries with Very High HDI have High per capita GHA, 3 have Medium per capita GHA, and 12 have Very High per capita GHA. None have a Low per capita GHA.

Figure 5 plots per capita GNI of the High and Very High HDI countries against their per capita GHA scores. Twenty-seven out of 43 countries with High HDI have Medium per capita GHA of which 20 are in the Upper Middle income and 7 are in the High income group. Five countries with High HDI have Low per capita GHA and are in the Upper Middle income group. Eight High HDI countries have High per capita GHA with 1 in the Upper Middle and 7 in the High income group. Three countries with High HDI have Very High per capita GHA with 1 each being in the Upper Middle, High, and Very High income group.

Twenty-four out of 38 countries with Very High HDI have High per capita GHA with 9 of them being in the High income and 15 in the Very High income group. Three Very High HDI countries have Medium per capita GHA of which 2 are in the High income and 1 in the Very High income group. Eleven Very High HDI countries have Very High per capita GHA with 2 in the High income and 9 in the Very High income group. None of the countries with Very High HDI have Low per capita GHA.

Figure 6 plots countries using their HDI and per capita GNI scores. Twenty-seven of the 43 countries with High HDI fall in Upper Middle Income, 15 in the High Income, and 1 in the Very High Income group. Twenty-five of the 38 countries with Very High HDI fall in the Very High Income group with 13 in the High Income group.

Results

The findings from the data analysis are presented as a comparison of two dimensional frameworks versus three dimensional frameworks to identify the truly sustainable zones for countries to aspire to.

Two Dimensional Frameworks

The two dimensional framework is used most commonly to understand the correlation between data on various aspects. In the six graphs presented here, it is easy to see how countries with High HDI and Very High HDI fare vis-a-vis their per capita GHA and their per capita GNI separately. These graphs also make it easy to understand the costs at which countries have achieved High and Very High HDI, which are in terms of their ecological footprint and the kind of incomes generated to provide the infrastructure and facilities created to achieve the High and Very High HDI. All the countries aspire to achieve High and Very High HDI to be compared favorably for good performance in the international community.

Figure 3. Graph plotting with very High and High HDI with reference to their Per Capita GHA.

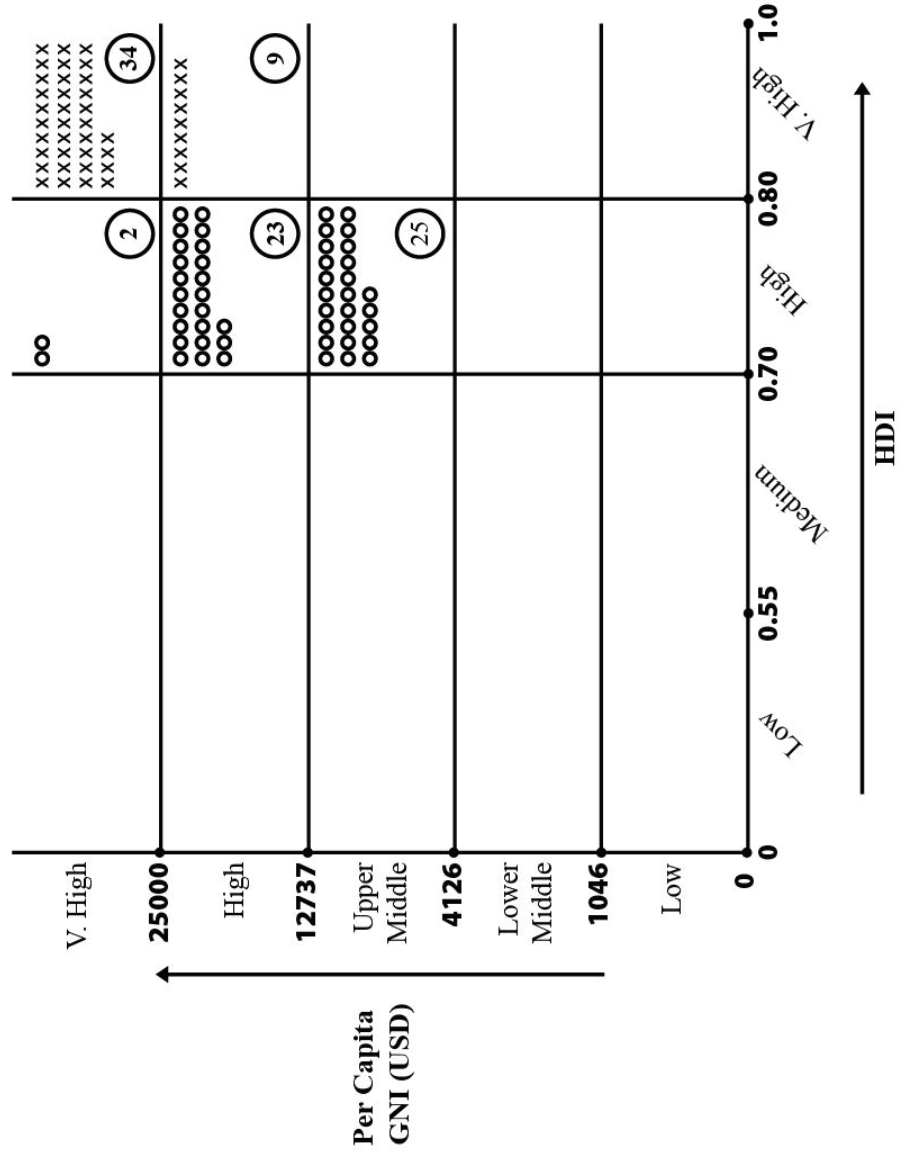


Figure 4. Graph plotting with very High and High HDI with reference to their Per Capita GHA.

Not to scale

Human Development Report, 2011 for HDI and GNI data, Reference year 2011

GNI categories as classified by The World Bank for 2011

X - V. High HDI Countries - 38 Countries Plotted
 O - High HDI Countries - 43 Countries Plotted

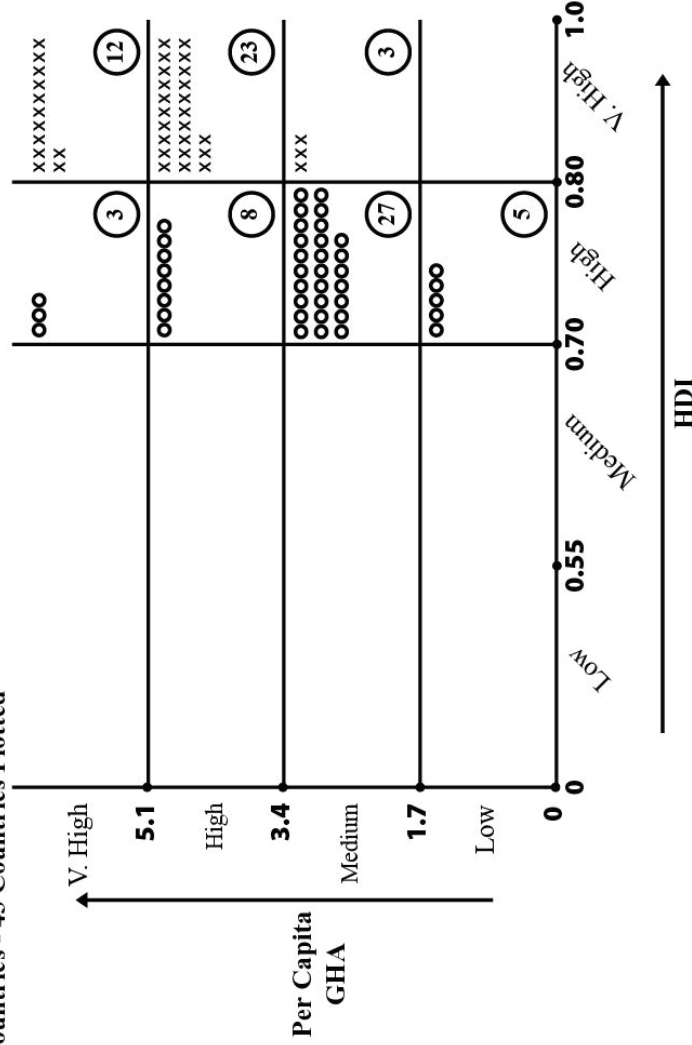


Figure 5. Graph plotting countries with very High and High HDI with reference to their Per Capita GNI and Per Capita GHA.

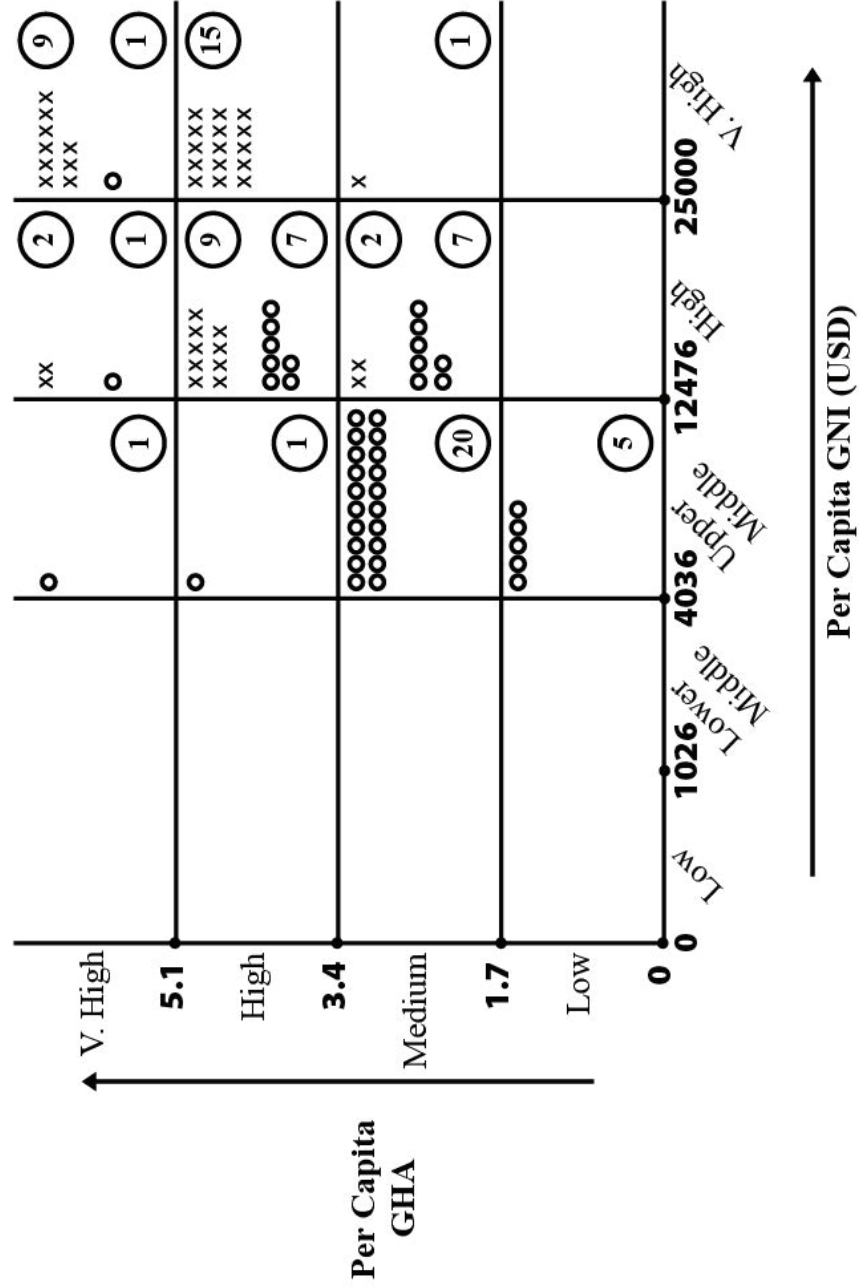
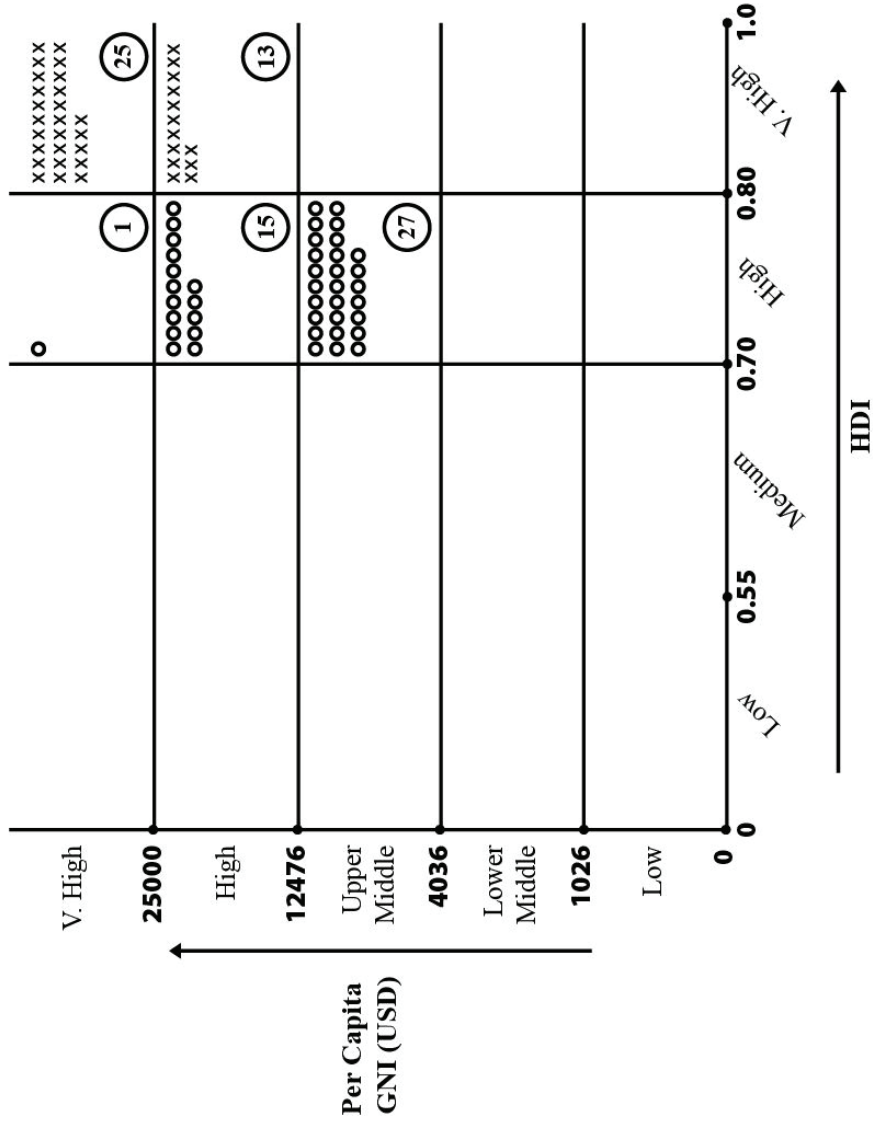


Figure 6. Graph plotting countries with very High and High HDI with reference to their Per Capita GHA.



In fact, the Global Footprint Network has analyzed the HDI and per capita GHA of almost all countries from 1980 to 2011 in a two dimensional animated graph, highlighting a sustainable zone bounded by High and Very High HDI and Low per capita GHA. This is the zone promoted as the aspiration zone for all countries to be able to live within the bio-capacity of one earth. This sustainable zone does not shed light on the incomes of the countries, which have achieved High and Very High HDI, for which another two dimensional graph has to be generated. The relationship between income and ecological footprint is very important for sustainability concerns, for which yet another two dimensional graph has to be generated. Hence, three two dimensional graphs are needed to identify the truly sustainable zone. While inferring that countries should bring down their per capita GHA to become sustainable, the first graph is unable to show how much per capita GNI has to be adjusted to move from Very High, High, and Medium per capita GHA to Low per capita GHA. It is unable to focus analytical attention on the close link between per capita GHA and per capita GNI, for which one has to refer to the other two graphs. It is unable to shed light on the incremental contribution of per capita GNI, above a threshold level, to increase the HDI value. What is this threshold level of per capita GNI needed to achieve an acceptable High level of HDI within the limits of Low per capita GHA? Such subtle nuances are missed out in two dimensional frameworks.

The three dimensions of HDI, per capita GHA, and per capita GNI need to be plotted simultaneously for all countries to identify the truly sustainable zones. Such an analysis has been attempted and is presented in the next section.

Three Dimensional Frameworks

Figure 7 presents the data of Figures 4, 5, and 6 (as all the data there refer to 2011) simultaneously as a three dimensional framework of a cube. The dimensions of HDI, per capita GHA, and per capita GNI are presented on the x-axis, y-axis, and z-axis of the cube respectively with the same categories being applied for each dimension as in Figures 4, 5, and 6. Instead of the number of countries plotted, as done in Figures 4, 5, and 6 earlier, the cube form of Figure 7 highlights the concentrations of the countries with different combinations of the three dimensions on different spaces of the cube using variations in shades of grey colour.

Thus, the cluster of countries having the combination of Very High HDI, High and Very High per capita GHA, and Very High per capita GNI are shown in dark shade of grey colour in the upper right hand corner of the cube (on the z-axis). This combination of spaces is indicated with the symbol of a star and has also been pulled out in miniature form with its three dimensions stated.

The group of countries with High and Very High HDI, Medium and High per capita GHA, and Upper Middle and High per capita GNI are highlighted in a lighter shade of grey colour in the middle section of the cube (on the z-axis). This combination of spaces too has been pulled out in miniature where its three dimensions are mentioned, and is indicated with the symbol of a triangle.

The combination of countries with High and Very High HDI, low per capita GHA, and a combination of part Upper Middle and part High per capita GNI – Medium per capita GNI – are highlighted in the lightest shade of grey colour in the lowest section of the cube (on the z-axis). This combination of spaces, indicated with the symbol of a circle, has been pulled out in miniature and mentions its three dimensions. An additional piece of information in this miniature is the band of part Upper Middle and part High per capita GNI, which has been shown as USD 10000 to 20000 as an indicative range.

Figure 7. Three dimensional cube showing the dispersion of countries with Very High, High and Low HDI with reference to their Per Capita GHA and Per Capita GNI in shades of grey colour code.

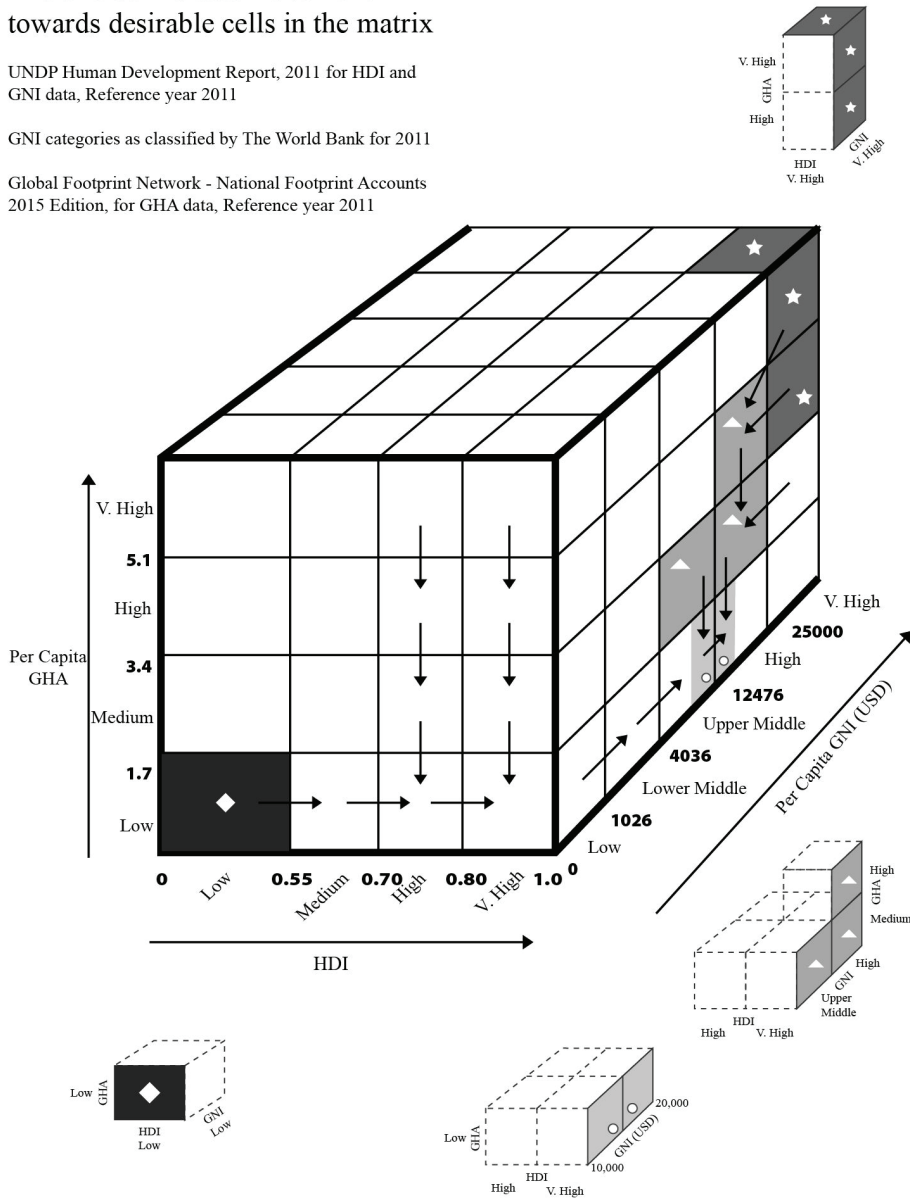
Not to scale

The arrows indicate movement towards desirable cells in the matrix

UNDP Human Development Report, 2011 for HDI and GNI data, Reference year 2011

GNI categories as classified by The World Bank for 2011

Global Footprint Network - National Footprint Accounts 2015 Edition, for GHA data, Reference year 2011



Three Dimensional Frameworks versus Two Dimensional Frameworks as a Design Approach towards Sustainability

The combination of countries with Low HDI, Low per capita GHA, and Low per capita GNI are highlighted in the darkest shade of grey colour in the lower left hand corner of the cube (on the x-axis). A miniature of this combination of spaces has been pulled out giving its three dimensions, and indicated with the symbol of a diamond. (This combination is not plotted in the two dimensional graphs).

When all the three dimensions are plotted simultaneously, it is easy to see the combination of the three dimensions, which is the sustainable zone. The spaces designating the sustainable zone in this three dimensional framework are different from the spaces, which emerge in the two dimensional framework.

It is quite clear that the combination of High and Very High HDI, Low per capita GHA, and Medium (part Upper Middle, part High) per capita GNI is the truly sustainable zone. No country has achieved the combination of Very High HDI, Low per capita GHA, and Very High per capita GNI, hence that zone is near impossible. The combination of Low HDI, Low per capita GHA, and Low per capita GNI is not desirable. The focus shifts to countries, which have achieved High and Very High HDI by staying within the limits of Low per capita GHA. Their per capita GNI, which falls around the range of USD 10000 to 20000 as per HDR 2015 with reference year 2014, is adequate to achieve the desired levels of HDI. (The data for per capita GHA are for 2011, so it is possible that by 2014 their per capita GHA may have increased with an increase in their per capita GNI).

What then is the incremental value of Very High per capita GNI above this level of USD 20000? Does it help to reduce the ecological footprint of the countries with Very High GNI to stay within the limits of Low per capita GHA? Is it possible to achieve the per capita GHA limit of ecological sustainability of 1.7 GHA for *all* countries? Is it possible to have infinite increase in per capita GNI for *all* countries with finite bio-capacity of the earth? What kind of trade-offs between per capita GNI and per capita GHA will be required to enable *all* countries to achieve High and Very High HDI levels and yet stay within the Low per capita GHA levels? Will *all* countries be able to achieve High and Very High HDI levels? Will *all* people in *all* countries be included in the High and Very High HDI levels? These are the type of questions, which will need to be addressed for achieving sustainability with inclusiveness, equity, and equality.

Figure 7 also has arrows drawn, which indicate the desired direction of movement of countries with various combinations of the three dimensions to move towards the sustainable zone of Very High/High HDI, Low per capita GHA, and Medium (part Upper Middle, part High) per capita GNI, as indicative pathways to sustainability.

Discussion

The data analysis attempted in this paper using the three dimensional framework of a cube can form the basis of identifying the pathways to sustainable growth and development, which calls for a design approach to enhance our understanding of sustainability.

Three Dimensional Frameworks as a Design Approach towards Sustainability

A design/designerly approach involves a creative and constructive way of looking at difficult problems by trying to understand problems and solutions together and by involving all the stakeholders (Cross, 2006).

People of a country are viewed as citizens and consumers, consistent with the economic and financial architecture of state and market institutions in economic theory. And a two dimensional framework is used to explain the effectiveness of these institutions as state and market failure/success to explain and address the issues of inclusiveness, equity, and equality in society. But people are more than just citizens and consumers. They are social beings and derive identity and meaning from belonging to groups and communities.

This third dimension of the role of people as communities is the missing dimension in economic theory.

Several works have drawn attention to this, some of which are briefly touched upon here.

Stephen Marglin (2008) has argued how economics as a discipline does not account for the role of communities and why it is important to do so. He refers to economics as a dismal science because of the way it has evolved as a discipline over the past few centuries to erode deep human and social ties of community and its consequences as experienced in present day reality.

Bill McKibben (2007) raises similar concerns in the context of sustainability and offers an alternative approach, building on the role of communities in society. He locates his argument in the basic premise that till now we have accepted that 'more' and 'better' in the socio-economic context are the same but the time has come to understand that 'more' and 'better' are not the same thing in addressing sustainability concerns.

R. A. Mashelkar (2008) has popularized the phrase 'More from Less for More' – MLM – through which he demonstrates the need for deriving *more* performance from *fewerless* resources for *more* people. It is done by comparing the innovations in the economically rich and poor countries in the context of meeting the needs of billions of people in the world who face wide ranging deprivation. He contends that high quality, high cost, and unsustainable pattern of innovation and production of goods and services will be replaced by high quality, frugality, and sustainability and that this process has already begun and will continue to spread to all parts of the world.

Usha Juman (2008, 2010) has proposed that the roles of people as citizens, consumers, and communities need to be balanced and space has to be created for people's organizations to be in the mainstream of the economy and society.

M. S. Swaminathan (2011) discusses the need for conservation, cultivation, consumption, and commerce patterns to be reconfigured to the reality of modern times to maximize biohappiness for all, keeping in view the inequities and deprivations faced by large numbers of people.

Seen in the context of ecological sustainability and the glaring differences between the rich and poor countries, these arguments really add up to pose the following two questions:

- For how long, for how many people, and for what kind of goods/services/facilities/wealth is it possible to accept that 'MORE' and 'BETTER' are the same?
- When or at what stage in the growth cycle do 'MORE' and 'BETTER' start to diverge and so it is not possible to accept that 'MORE' and 'BETTER' are the same for a given set of people?

The tangible resources of the earth and the intangible resources of humanity will need to be assessed on the touchstone of 'MORE' and 'BETTER', leading to choices which can be stated as:

- MORE IS MORE
- MORE IS LESS
- LESS IS MORE
- LESS IS LESS

Tangible resources of the earth such as air, water, and soil are subject to the laws of conservation of mass and energy. These resources cannot be increased infinitely

even after they undergo transformation. What do ‘MORE’ and ‘BETTER’ mean for the use of such tangible resources when we aspire for inclusiveness, equity, and equality in nurturing the potential of *all* people versus of *some* people as well as for the sustainability of life systems?

Intangible resources of humanity such as human capability, intellectual capacity, spiritual capacity, human happiness, and satisfaction are possible to increase continuously. What does ‘MORE’ and ‘BETTER’ mean for the use/promotion of such intangible resources when we aspire for inclusiveness, equity, and equality in nurturing the potential of *all* people versus of *some* people as well as for the sustainability of life systems??

The two dimensional framework to explain the effectiveness of state and market institutions as state and market failure/success has its limitations. The three dimensional framework of state, market, and people and success/failure for all the three components can make it possible to incorporate the roles of people as citizens, consumers, and communities simultaneously to explain the effectiveness of the three types of institutions. It will shed new light on the operationalisation of the truly sustainable zone as a design approach and also redefine the prevalent meaning of ‘developed countries’ and ‘advanced economies’.

Limitations

The availability of data for comparable periods across countries to measure the three Ps of People, Planet, and Profits is a limitation, which is recognized by the author. Nevertheless, an attempt has been made to illustrate the value of a three dimensional framework for sustainability. Refinement and continuous updating of data will become very critical for rigorous application of this framework in comparing the performance of countries.

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Three Dimensional
Frameworks versus
Two Dimensional
Frameworks
as a Design
Approach towards
Sustainability