

MPRA

Munich Personal RePEc Archive

Redefining the development index of a nation

Jakhotiya, Girish

22 December 2018

Online at <https://mpra.ub.uni-muenchen.de/90783/>
MPRA Paper No. 90783, posted 26 Dec 2018 21:01 UTC

Redefining the Development Index of a Nation

Dr. Girish Jakhotiya

1. Limitations of GDP as a Development Index

A lot of research has been done on the Development Index of a nation in the past 100 years. Yet the latest definition and its ingredients do not completely capture the various dimensions of development. For example, the rich countries measured 'development' mostly through the parameter of 'Growth in Gross Domestic Product'. That measure suffers from following lacuna or limitations:

- GDP growth caused serious loss of natural environment. This loss was not measured accurately and honestly.
- GDP growth computation is based on statistical average of the various sectors and sectors of people. The computation of Per Capita Income (PCI) is also a statistical average. A good example to point out inaccuracies would be that of computing and combining the income of the royal family of the Sheikh of Saudi Arabia along with the PCI of the common people of this country. This wouldn't give a true picture. An average citizen of Saudi enjoys a much lower Per Capita Income. Likewise, the 10% very rich and upper middle-class Indians also distort the computation of the Per Capita Income in India.
- In countries like China, Saudi Arabia, Oman, Kuwait, Russia, a major portion of GDP is decided by governmental dominance and artificial initiatives. The GDP is fabricated and the true participation of the people in GDP growth is not measured.
- In quite a few countries, GDP has been managed with excessive foreign and domestic borrowing, and also with artificial or unreasonable management of the currency. Such GDP was never sustainable
- The GDP of the US and European countries has been heavily based on 'demand pull' caused by excessive public consumption.
- GDP does not measure accurately the productivity of old and new capital, old and young labour, and old and new infrastructure for instance.
- The GDP of China is not sustainable in the long-run as it neglects the social maturity and political freedom of China's people. Therefore, China's GDP growth is more robotic than human.

- The GDP of Japan suffered negative growth for almost two decades. The GDP monitoring in Japan failed because it didn't consider the serious impact of economic disequilibrium.

2. Appropriate Definition of the Development Index

2.1 Four dimensions of development

The appropriate definition of the Development Index should have following four dimensions of development:

- (a) Sustainability
- (b) Versatility
- (c) Inclusivity
- (d) Equity

The present-day parameters measuring development do not really capture the above four dimensions clearly. Let us summarily look at the development in the last two decades of globalization of those countries chosen for this study:

Country	Four dimensions of development			
	*Sustainability	*Versatility	*Inclusivity	*Equity
US	Low	Low	Average	Low
Germany	Average	Low	Average	Average
England	Low	Low	Average	Low
France	Low	Low	Better than Average	Low
Italy	Very Low	Low	Average	Low
China	Low	Low	More than Average	Low
Saudi Arabia	Low	Very Low	Average	Low
Indonesia	Low	Low	Low	Low
South Africa	Low	Low	Average	Low
India	Average	Low	Average	Very Low
Japan	Low	Low	High	Average
South Korea	Average	Low	Average	Average
Brazil	Low	Low	Average	Low
*Sustainability – long-term sustenance of development				
*Versatility – addressing all dimensions of development				
*Inclusivity – inclusion of all people in development				

*Equity – equal share of development to participants

2.2 Development Index of an individual

A country's development is directly proportionate to its individual's development. If an individual develops in a versatile manner, his country too develops through all the dimensions – multitalented and all-rounded. The Development Index of an individual should have the following four components:

1. Material satisfaction
2. Intellectual satisfaction
3. Social satisfaction
4. Cultural (Emotional) satisfaction

Versatile development of an individual should comprise of all these four components. Such versatile individuals alone make a versatile society. It would be interesting to observe the different countries on the basis of these four components:

Country	Components of an Individual's Development Index			
	Material satisfaction	Intellectual satisfaction	Social satisfaction	Cultural satisfaction
US	High	Average	Average	Low
Germany	High	More than Average	Average	Average
England	High	Average	Average	Low
France	High	Average	More than Average	Average
Italy	High	Average	Average	More than Average
China	More than Average	Low	Low	Average
Saudi Arabia	High	Very Low	Low	Low
Indonesia	Average	Low	Average	Average
South Africa	Below Average	Low	Average	More than Average
India	Low	Average	High	High
Japan	High	More than Average	High	Average
South Korea	High	Average	High	Average
Brazil	Average	Average	High	High

All of the above mentioned thirteen countries face a severe problem of disequilibrium in their Development Index which explains why all these countries are suffering today, not to mention

the whole world is. Material satisfaction refers to physical enjoyment and enrichment of life using all possible comforts. The developed countries score very high on this front. Intellectual satisfaction is about intellectual freedom and development. It is about ideas, innovation and new doctrines. It is about rejecting outdated doctrines and welcoming the new ones. Germany and Japan score 'more than average' in this aspect, as a result of their strong cultural background. England and US score 'average' because these countries are fast losing out on the front of 'visionary leadership'. China scores low here because the people of China clearly do not enjoy intellectual freedom. The lowest score is that of Saudi Arabia, also the case of other countries in the Gulf. The reasons for low score on this parameter are quite different for China and Saudi Arabia.

Social satisfaction is high and it carries considerable weightage in India, South Korea and Brazil. The social system (which is based on strong family system) in these countries has proved to be an important and yet partial solution to the problem of economic collapse. Japan could sustain economically for more than two decades because of its social values, network and maturity. Social satisfaction in the US, Germany and England is average. These countries have been implementing good social security system, which is more of an economic package than social or family bondage. Social satisfaction is low in China and Saudi Arabia as these countries do not believe in real social freedom. (Again, the reasons here are different for these two countries.) Interestingly, social satisfaction need not directly and proportionately represent social maturity or social discipline. India's score on social discipline could be low although it scores well for social satisfaction.

Cultural or emotional satisfaction is more an outcome of human relationships and freedom of expression. The Americans and the British score low because their people stress more in rational relationship which is emotionally dry. Although China does not permit public freedom of expression, the Chinese culture however promotes emotional bondage between two generations. India for one, scores high on this front. It probably is a boon and curse all at once. Indian politicians have been fooling their voters emotionally for decades. But this very emotional bondage across the nation, has kept it united as well. Of course, India needs a balance between intellectual and emotional satisfaction.

For decades, western philosophers, economists and scientists thought that a human being is a rational animal and therefore he thinks rationally. Until recent times, it was only the body and

the brain and subsequently the material and intellectual satisfaction that were taken into consideration. Now with the advent of irrational behaviour amid human beings the world over, the experts seem to agree that the emotional and social dimensions of human behaviour are equally critical. This admission of the existence of mind may be a result of certain well-known incidences and situations:

- Behaviour of Germany imposing two world wars and in addition its 2014 conduct in the Euro zone
- Behaviour of the rich Americans and big American corporations during those difficult times since 2007
- Extremist movements of certain groups and countries involved in Radical Islam
- China’s internal socio-political environment and its external ambition to become a world power.
- Japan’s socio-economic deterioration during last decade and its recent response to global developments
- Behaviour of the political leaders of Russia and world’s reaction to it.

The significance of mind and the impact of irrational behaviour are very obvious when we observe the economic conditions in the Euro zone and the uncertainty of economic performance in the US. Both, US and Europe produced many Nobel Prize winners in economics, management science and philosophy. These learned visionaries developed several mathematical models to describe economic outcomes. A lot of systematic research was done by the universities and business associations alike. Yet, they could not predict or define the impact of mind on the collective and individual behaviour of people. Today in the language of economic and social sciences, the four components of the Development Index (applied to an individual) may be described as follows:

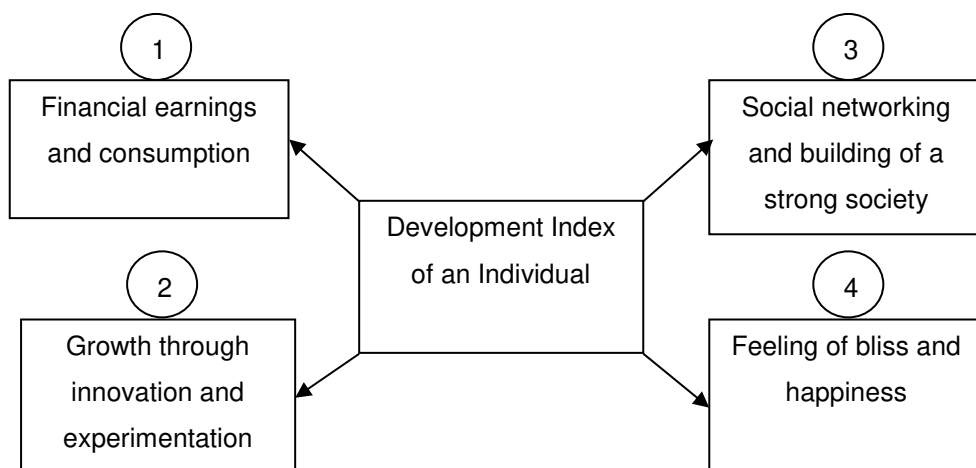


Figure 1

If anyone of the above stated components is either absent or reduced, the overall development becomes unsustainable. This can be obviously illustrated as follows:

- Japan's economic development became unsustainable about two decades ago as the Japanese neglected happiness and innovation
- America's economic sustenance got compromised because it could not control consumption and in addition, America stopped innovating
- India could not share its economic growth with its poor because it has not built a strong society and India has not been checking the unethical earnings particularly of a few mighty and corrupt
- China's economic progress is becoming questionable as its people are increasingly looking out for social bliss and happiness.

In the language of philosophers, body and brain are the carriers of *materialism*, whereas mind is the driver of *spiritualism*. Materialism is another name for attachment and spiritualism represents detachment. A fine balance between the two needs to be struck:

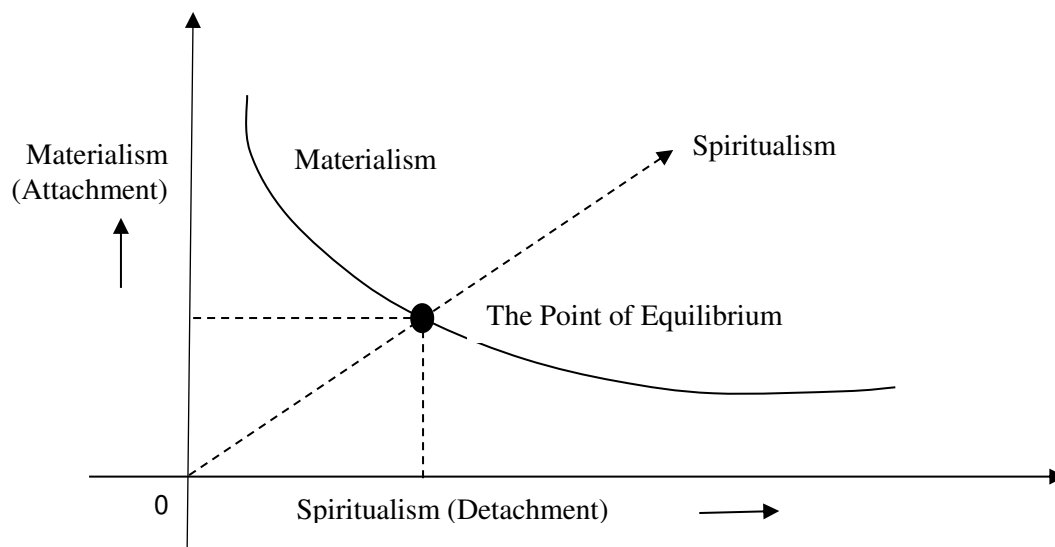


Figure 2

A mature human being (and his mature society) generally performs at the Point Of Equilibrium.

The socio-economic deterioration and collapse of the globe could be arrested if every person adopts the fine combination of attachment and detachment. Presently what is happening is quite the contrary. The developed countries imposed the doctrine of 'survival of the fittest' on the globe through their material advancement. On the other hand, the Islamic countries started

opposing this doctrine with radicalisation of their religious processes and programs. Both the sides have indulged in excesses. In principle, any unsustainable excess has to eventually collapse. Darwin’s theory of ‘survival of the fittest’ has boomeranged on the rich nations. The radicalisation of Islam too will be crushed since it denies scientific temperament and material advancement.

In other words, the concept of development of the rich countries (especially the western countries) is based on unlimited freedom of an individual. And it is this limitless freedom which has brought their economies to ruin. On the other side, the Islamic countries believe in development through collective discipline. They impose boundaries of behaviour on their citizens not leaving any scope for intellectual and social freedom of the individual. Both these excesses are actually damaging and on the verge of destroying any peaceful existence on earth. Freedom without discipline leads to a chaotic situation and discipline without freedom is tyrannical. The global economy and society are both entrenched in the clash of these two extremes or excesses.

The key to success is to strike equilibrium. What the globe needs is a middle path, a balance between freedom and discipline. Freedom should promote progress and discipline should check freedom from running amuck. Therefore, for the global good and healthy development there has to be a reciprocal give and take, where all participants need to sacrifice for mutual growth and eventually the globe must compensate all participants amicably. The arrangement may be exhibited as follows:

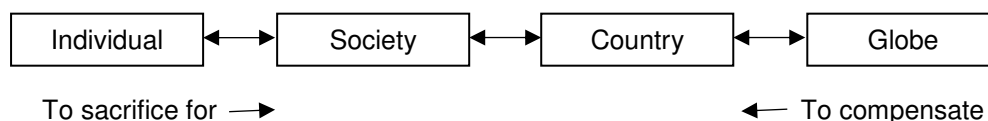


Figure 3

An individual should sacrifice for his society, the society for the country and the country for the globe. These sacrifices should be reasonably and in a timely manner compensated in the descending order.

The development models in use today worldwide must be critically and objectively examined with the view to answering the following four criteria:

- Will a development model eradicate poverty?

- Will it offer equal opportunity of growth to all?
- Will it be sustainable, considering the limited quantum of natural resources?
- Will it facilitate versatile development taking into consideration all the four types of satisfaction essential to a human being?

Unfortunately, none of the present development models answer to the above four questions affirmatively.

The Development Index for an individual should be a sum total of four component-wise indices or satisfactions as shown in the following table:

Table 3		
Sr. No.	Component-wise Index	Weightage (significance)
1	Material Development <ul style="list-style-type: none"> - Earning Per head - Spending on primary necessities - Spending on competency building - Saving for future 	
2	Intellectual Development <ul style="list-style-type: none"> - Participation in innovation - Participation in socio-political and economic initiatives - Involvement in co-curricular activities - Development of other skills or roles 	
3	Social Development <ul style="list-style-type: none"> - Participation in social work - Efforts to nullify the impact of outdated or wrong social customs - Developing a mindset for social sacrifice - Efforts in the direction of becoming a global citizen 	
4	Emotional Development <ul style="list-style-type: none"> - Degree of happiness - Enrichment of human relationships - Competence of using the emotional quotient - Ready to perform & cooperate under pressure 	
	Total	100

The basic purpose of designing and using the Development Index is to transform every individual into a mature global citizen. Of course, the weightage to be attributed to the various components may vary from country to country. For example, material development should carry more weight for underdeveloped countries whereas emotional development could be more significant for a country like the US. For India where the gap between the rich and poor is quickly widening and the old caste system is still badly impacting the down-trodden, weightage would have to be given accordingly and differently for different societies. In the Gulf countries, intellectual and social development would necessarily be primary.

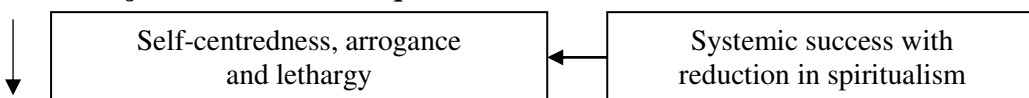
The use of Development Index should not be misplaced or misused. Hence the application of this index should be based on the fundamental principles of equity, sustainability, versatility and inclusivity. Even a negligible fall in the Development Index should be considered an alarm, a warning signal to avoid any further deterioration. Great nations take such early warning signals sincerely and seriously.

The oriental social philosophy pertaining to such gradual deterioration could be applied to the great economies of today. India's socio-economic deterioration of last five centuries could be measured using the parameters defined by the oriental philosophy. Kindly follow my illustration here under:

Level 1: Satva Gunas -- Highest qualities in its purest form



Level 2: Rajo Gunas -- Lesser qualities



Level 3: Tamo Gunas -- Devilish qualities / Demerits

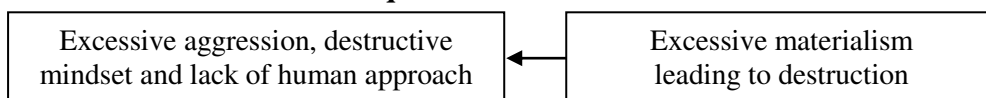


Figure 4

The deterioration from Level 1 to 2 and to 3 is an obvious result of an imbalance between materialism and spiritualism. Every country must be constantly aware of the early warning signals, which indicate the slightest probability of any deterioration. India, in its yester years as a conglomerate of small cooperative kingdoms, experienced the status of Level 1 under the

rule of some renowned emperors. Democracy flourished and prosperity reached its zenith in those ancient days. With the passage of time India and its people deteriorated to Level 2 and then got demoted further to Level 3. If we are to sample the countries under my study here, all of them fall in the category 2 or 3. In fact, there is a rapid deterioration even from Level 2 to 3. It is as if all countries are earnestly trying to reach rock bottom in speed and unless we arrest this downturn rapidly we are heading for a major socio-economic collapse.

2.3 Development Index (DI) of a nation

In tandem with what I have stated earlier, every country must develop in a versatile manner, taking care of all the necessary dimensions of development. Take for instance China –it is developing economically and industrially but not socially. The case of Japan is quite the opposite. Japan has developed socially but its economic sluggishness of over two decades is alarming. In more recent times, especially during last decade, England has been facing negative rate of development with a few other European countries in tow. Germany of course has been an exception and is able to sustain economically and steer through difficult times. South Africa has to go a long distance to reach a level of primary development, and as for Saudi Arabia its development has been artificially restricted by its own religious doctrines. Indonesia's infrastructure and industry require good amount of investment. This country suffers from heavy oil subsidy given to its citizens.

A country's DI must serve the purpose of equity, sustainability, inclusivity and versatility, as is stated earlier. The weight to be accorded to the Component-wise Index would vary depending on the status of the country and its economy. However, this Index must always serve the purpose of attaining economic equilibrium with its early warning signals suggesting corrective action. If US would have utilised such an index, it could well have avoided the collapse of many of its financial institutions. The same could be said of the failure in the Euro region.

It is not just enough to compute and monitor one single DI for a country, especially if it is about a complex country like India. You must constantly work on the DI to keep it relevant and functional. India has got classes and castes with geographical variations and regional imbalances. The classes, castes and regions need further classification by sectors of agriculture, services and manufacturing. India's mass is heterogeneous by culture. This complexity is unique to India alone and no other country.

The DI needs to be comprehensive enough to cover all the dimensions or components of development. Therefore, it should comprise of the following ten components:

- (a) Economic development
- (b) People development
- (c) Technological advancement
- (d) Resource management
- (e) Global participation
- (f) Quality and quantum of governance
- (g) Creation and use of assets
- (h) Social maturity
- (i) Safety of the nation, its people and assets
- (j) Systemic strength

Present DI used by various countries and global institutions emphasises more on economic development in tangible statistical terms. The present DI omits the qualitative and social aspects of development. It does not avail of any parameter to measure the efforts deployed by a singular country to build its further competencies. It does not also measure the efforts of a country to build up further competencies. In fact, each of the aforementioned components should contain sub-components which I have expanded hereunder:

- (a) Economic development
 - (i) Growth in GDP
 - (ii) Rate of saving of the economy
 - (iii) Per capita income (adjusted for inflation and purchasing power parity)
- (b) People development
 - (i) Professional competency
 - (ii) Employment generation
 - (iii) Rate of growth of family income and consumption
 - (iv) Life longevity
 - (v) Happiness quotient
- (c) Technological advancement
 - (i) Efforts in innovation
 - (ii) Use of better technology
 - (iii) Average investment in technological growth
- (d) Resource management

- (i) Capital formation
 - (ii) Output per unit of resource consumption
 - (iii) Consumption of natural resources
 - (iv) Environmental damage
 - (v) Capital availability for small and medium size entrepreneurs, professionals and farmers
- (e) Global participation
- (i) Balance between exports and imports
 - (ii) Use of foreign capital, technology and labour
 - (iii) Investment abroad
 - (iv) Employment of country's citizens abroad and their remittances toward home country
 - (v) Global competency building
 - (vi) Participation in global environment management
- (f) Quality and quantum of governance
- (i) People participation in public governance at various levels
 - (ii) Productivity and transparency in the government
 - (iii) Cost of governance
- (g) Creation and use of assets
- (i) Creation of infrastructure for public, industry, services and agriculture
 - (ii) Productivity of assets
 - (iii) Longevity and safety of assets
- (h) Social maturity
- (i) Efforts of equity on all fronts
 - (ii) Cultural maturity
 - (iii) Safeguard of the interest of minority and weak in the society
 - (iv) Efforts for eradication of wrong or outdated social customs
 - (v) Care for parents and family
- (i) Safety of the nation, its people and assets
- (i) Spending on country's safety -- its assets, people and knowledge
 - (ii) Collaborations with other nations for collective safety against all odds
 - (iii) Readiness to fight natural calamities
- (j) Systemic strength
- (i) Banking and insurance system

- (ii) Legislative system
- (iii) Law and order system
- (iv) Capital market system

2.4 Computation of Development Index of India

Let us take a broad example of computing DI of India with the reference date as 31st March 2017, based on assumptions and perceptions:

The first component of DI -- Economic Development itself will have to be computed cautiously for three distinct groups of people residing in India as follows:

Table 4			
Group of people	Economic Development (Score out of 10) (a)	% of population (b)	Weighted Factor (a x b)
Rich	10	5	50
Middle Class	6	40	240
Poor	2	55	110
		100	400
The Weighted Average Score of Economic Development = (400 ÷ 100) = 4			

Such similar computations would be required for components like People Development and Quality and Quantum of Governance. The quality of governance is not quite the same through the various states of India. People development of a minority community like that of the Muslims is lower compared to the average of the nation.

Another important aspect of the DI computation is the weightage accorded to the ten components. Of course, it would vary from country to country. For example, the quality of governance would carry more weightage in India if compared to that of US. Likewise, People development would carry good weightage in today's US compared to the US of two decades ago. Let us look at the following illustration representing the weightage applied to India, US and China (reference date taken as 31st March 2017):

Table 5				
Sr. No.	Component of DI	India	US	China
1	Economic development	10	12	8
2	People development	8	10	9
3	Technological advancement	6	4	5

4	Resource management	8	12	10
5	Global participation	7	13	16
6	Quality and quantum of governance	13	10	15
7	Creation and use of assets	13	10	6
8	Social maturity	12	14	12
9	Safety of the nation, its people and assets	10	7	6
10	Systemic strength	13	8	13
	Total weight	100	100	100

Let us now look at the illustration of planning and assessing India's performance for its DI (reference year 2016-17):

The performance on each parameter or component of the DI should be measured or defined on a scale of '0 to 5' as follows:

5 – Outstanding, 4 – Very Good, 3 – Good, 2.5 – Average, 2 – poor, 1 – Very Poor & 0 – Nil

Take for instance the first component - Economic development, with a rate of growth in GDP of around 7% it may be considered 'Outstanding' (under the given circumstance) and hence it will carry a corresponding value of 5 on the scale. Indeed, this interpretation or conversion remains subjective. Following is the hypothetical illustration of India's DI for the year 2016-17:

Sr. No.	Component of the DI	Targeted Value	Actual Value	Weight	Targeted Weighted Value	Actual Weighted Value
		(a)	(b)	(c)	(a x c)	(b x c)
1	Economic development	4	3	10	40	30
2	People development	3	2.5	8	24	20
3	Technological advancement	3	2.5	6	18	15
4	Resource management	4	3	8	32	24
5	Global participation	5	4	7	35	28
6	Quality & quantum of governance	4	3	13	52	39
7	Creation & use of assets	4	3	13	52	39
8	Social maturity	3	3	12	36	36

9	Safety of the nation, its people & assets	5	4	10	50	40
10	Systemic strength	4	3	13	52	39
Total					391	310
Targeted Average Value of DI = $391 \div 100 = 3.91$ which is Very Good						
Actual Average Value of DI = $310 \div 100 = 3.1$ which is Good						

India was expected to perform at level ‘Very Good’ on its DI but its actual performance was a mere ‘Good’. You can define this as a ratio of 310/391 which is 0.7928. This index defined in percentage would be 79.28%. India’s performance was thus around 79% on its targeted DI. (If we are to take the desirable value of the DI as ‘5’ then the actual score of 3.1 translates to 62%. It is matter of interpretation with an element of subjectivity.)

The DI needs to target all the three sectors of a given economy independently, namely agriculture, manufacturing and services. Each component of the DI must be defined using the following matrix for Economic Development:

Table 7

Economic Development	Sectors of Economy								
	Agriculture Regions			Manufacturing Regions			Services Regions		
	East	West	Rest of India	East	West	Rest of India	East	West	Rest of India
Rich									
Middle Class									
Poor									

Thus, a versatile Development Index should be very useful in revisiting and redefining the ‘development status’ of an economy. Japan is a developed economy, stagnated for more than two decades. This obviously raises a question about the sustainability of a nation’s economic status defined traditionally. We need to interpret ‘development’ with greater maturity applied to the ‘collective good’ of all of us

References

1. Campbell McConnell, Stanley Brue & Sean Flynn, “Macroeconomics: Principles, Problems & Policies (Irwin Economics)”

2. Paul Krugman & Robin Wells, “Macroeconomics”
3. Prof. Adam Smith, “The Wealth of Nations”
4. N. Gregory Mankiw, “Macroeconomics”
5. Prof. Joseph E. Stiglitz, “The Great Divide! Unequal Societies and What We can Do about Them”