

Emerging Trends in Indicators and index

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“The most difficult thing in life is to discover the obvious” – Mahbub ul Haq – (Father of UNDP Human Development index)

Reflections on Human development (1995)



Many environmental indicator initiatives

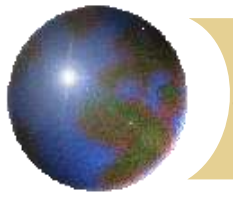
| <i>Initiative/Agencies</i> | <i>No. of indicators</i> |
|--|--------------------------|
| <u>International</u> | |
| <i>A Better World for All 2000</i> / IMF, OECD, UN and World Bank (WB) | 5 |
| UN Statistical Division/ Intergovernmental Working Group on the Advancement of Environmental Statistics | 55 |
| <i>An Assessment of the Statistical Indicators Derived from UN Summit Meetings (Draft)</i> /Friends of the Chair of the United Nations Statistical Commission for the 2002 UNSC Meeting | 43 |
| <i>“Shaping the 21st Century” Project</i> / WB, OECD, UN, and WRI | 10 |
| <i>Indicators of Sustainable Development</i> / UN Commission of Sustainable Development | 61 |
| <i>Environmental Performance Indicators</i> / WB | 64 |
| <i>1999 Environmental Data Compendium</i> / OECD | 23 |
| <i>10 Indicators for Environment</i> /OECD | 10 |
| <u>Regional</u> | |
| <i>Environmental and Sustainability Indicators Project</i> / International Center for Tropical Agriculture (CIAT) and UNEP | 93 |
| <i>State of the Environment in the European Union</i> /European Environment Agency | 16 |
| <i>Nordic Set of Environmental Indicators</i> /Nordic Indicator Group | 37 |
| <u>National</u> | |
| <i>Sustainable Development in the United States</i> / US Interagency Working Group on Sustainable Development Indicators | 16 |
| <i>Ecological Indicators for the Nation</i> / US Commission to Evaluate Indicators for Monitoring Aquatic and Terrestrial Environments: US Commission on Geosciences, Environment and Resources and US National Research Council | 13 |
| <i>Canada’s National Environmental Series</i> /Environment Canada | 43 |
| <i>Sustainability counts: consultation paper on a set 'headline' indicators of sustainable development</i> / UK Department of Environment, Transport and the Regions | 7 |
| <i>Green Headline Indicators – Monitoring Progress towards Ecological Sustainability</i> / Swedish Environmental Advisory Council | 12 |

Types of indices/indicators based on purpose

- **Measuring outcomes i.e. HDI**
- **Measuring performances i.e. EPI**
- **Monitoring progress i.e. MDG indicators**
- **Resources accounting**
 - **EFI**
 - **HANPP**
 - **Environmental Accounting**
 - Genuine Savings Account : Wealth of nations by the World bank**
- **Others measuring vulnerability, well being etc.**

Types of environmental indices/indicators based on data sources

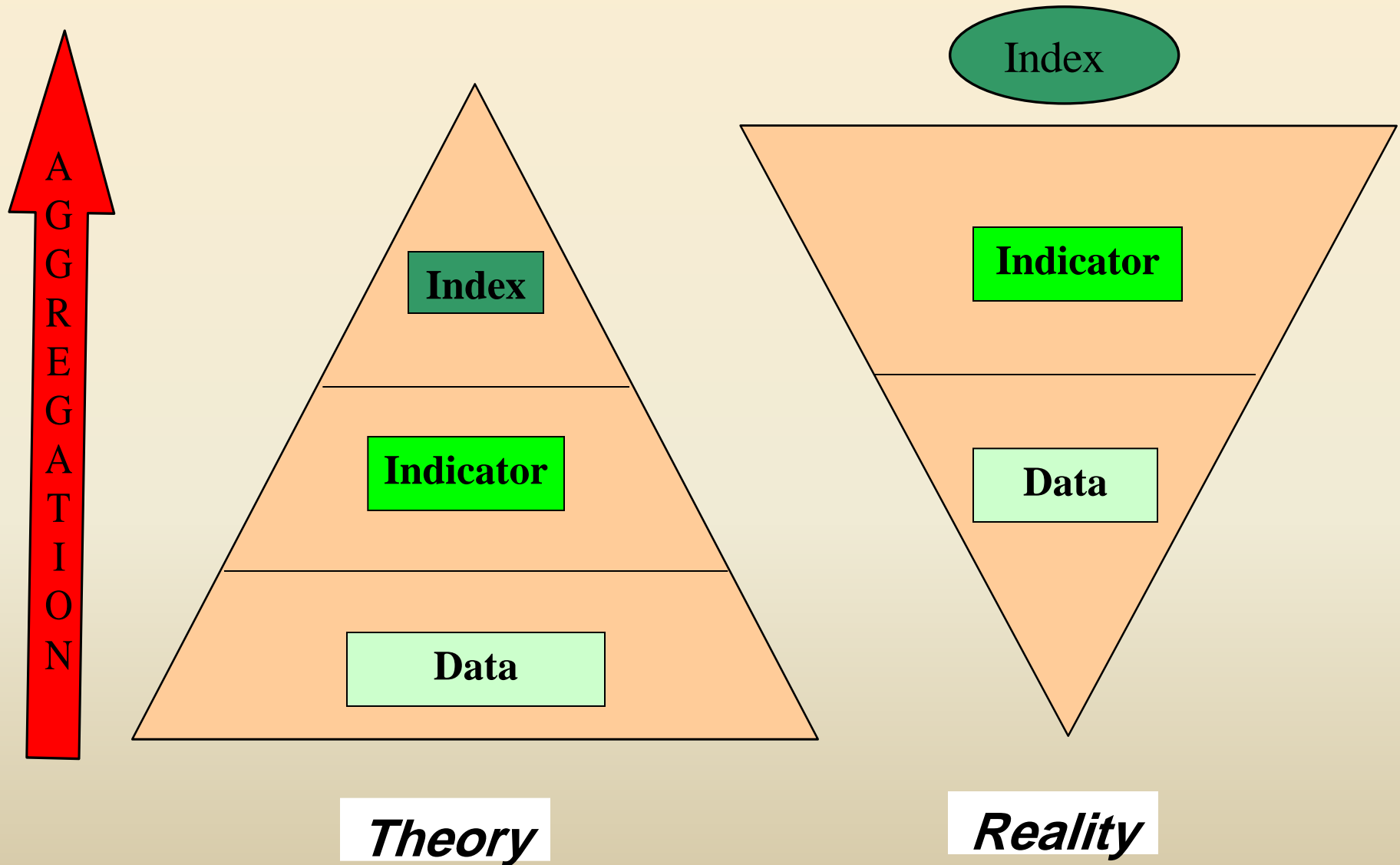
- **Data items supplied by government agencies and compiled by international organizations (Official statistics); (GDP, HDI, EPI)**
- **Data Items supported by surveys of industries and households; (Corruption index, Corporate Social Responsibility)**
- **Data items supported by NGOs; (Living Planet index; EFI)**
- **Data items supported by research agencies; (HANPP)**



Summary of Indicator landscape

- **A number indicators list and are published at the national, regional and global level;**
- **Only a few efforts are based on regular reporting i.e. EEA, OECD, MDGs;**
- **List of indicators keep on changing i.e. WWAR;**
- **Too much discussion on theoretical frameworks and a long list of indicators;**
- **Hardly any improvements in data collection for calculating indicators.**

Information Pyramid: Theory and Reality



UN Statistical Framework for data collection

- ***Framework for Development of Environmental Statistics (FDES)***
- ***System of Environmental – Economic Accounting (SEEA)***

Many: Sustainable Development Indices

- ❖ **Better Life Index:** 34 OECD countries (in future will include BRICS); well being
- ❖ **Living Planet Index:** global; overall global biodiversity status
- ❖ **Natural Capital Index:** global, regional and selected countries; indicator framework for human impact on biodiversity
- ❖ **Ecological Footprint:** multiple scales from national to individual; human demand on the biosphere
- ❖ **Environmental Performance Index:** most countries; ranking on effective national environmental protection efforts towards targets
- ❖ **Environmental Vulnerability Index:** 40 countries, focus on SIDS; Environmental vulnerability to future shocks

Sustainable Development Indices

- ❖ **FEEM Sustainability Index:** developed countries, regions, world; economic, social and environmental sustainability
- ❖ **Genuine (or Adjusted Net) Savings:** all countries; sustainability of investment policies
- ❖ **Happy Planet Index:** 179 countries; degree to which long, happy lives are achieved per unit of environmental impact
- ❖ **Well-being Index:** 180 countries; level of human and ecosystem well-being – distance to target
- ❖ **Domestic Material Consumption:** 27 EU countries; natural resource use, including exports and imports of materials and products

Challenges

- ❖ No simple index like HDI to catch popular imagination;
- ❖ Indices work best for well-defined issues (narrow scope) Eg., Living Planet Index focus on biodiversity
- ❖ Focus on broader environmental goals require many variables for many countries -- can be too complex
- ❖ Focus distortions: minimal environmental impact in developing countries vs. high environmental performance in developed ones
- ❖ Lack of improved data and monitoring systems to measure progress for all countries

Characteristics of an Index

Simple
Understandable
Credible
Repeatable
My Place/Country
Comparative Analysis
Incentive for actions

Human Development Index (HDI)

- We need a measure of the same vulgarity as GNP-just one number-but a measure that is not blind to social aspects of human lives as GNP is.

Mahbub ul Haq

- ...the HDI has served to broaden substantially the empirical attention that the assessment of development process receives.

Amartya Sen

Methodologies for Constructing Indices

GNP: *input* data for manufacturing and service sector

Corruption Index: based on *perception* using sample surveys

HDI: *outcomes* based on Max and Min concept for life expectancy at birth, adult literacy, gross enrollment ratio in school and GDP per capita (PPP\$)

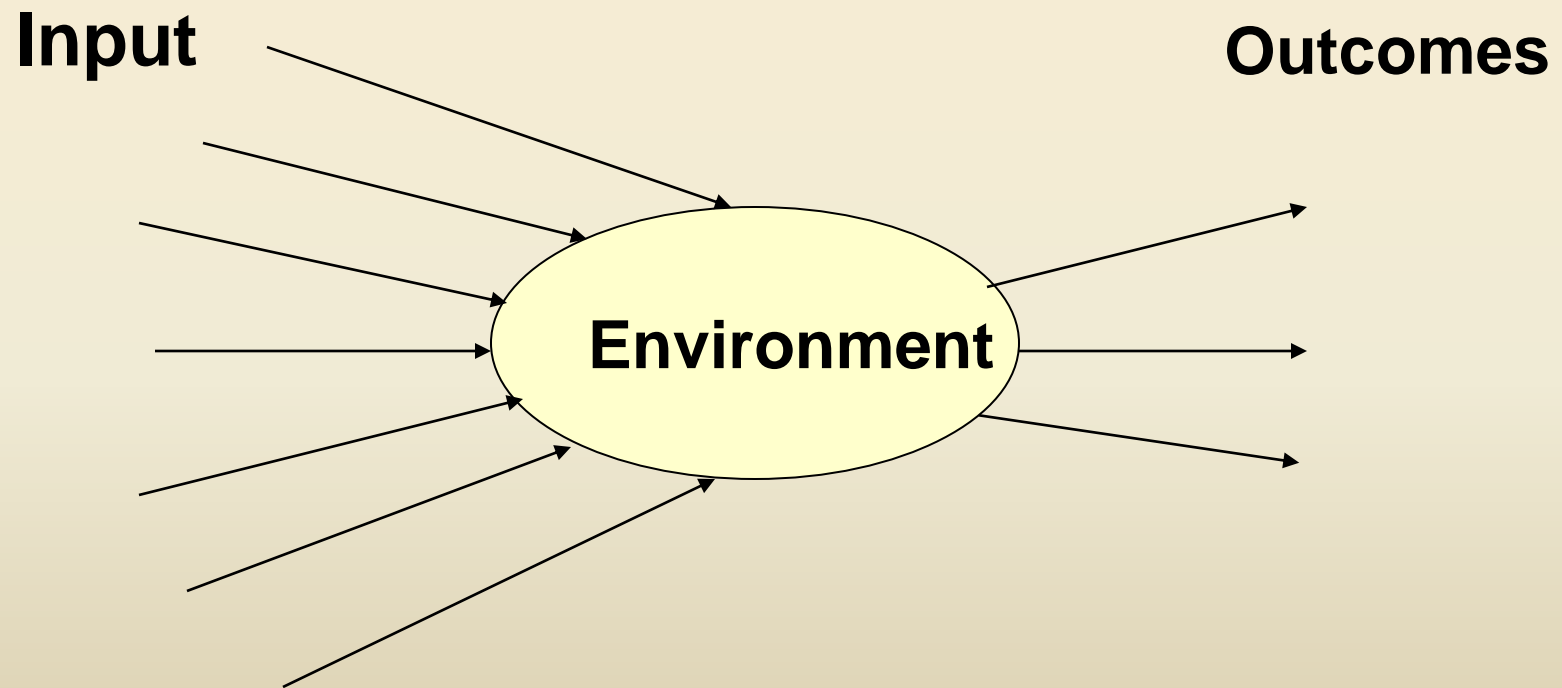
Similar methods for Human Poverty Index, Gender Index, Gender Empowerment Measure and Technology Achievement Index

Why measure outcomes

- **Rather than number of inputs like more legislations and more money, one should also look at the outcome based proxy measures for ??;**
- **Look at the end result how much things are really improving;**
- **Able to track progress over time**

An Approach to development of an index

Focus on leading achievement/outcomes indicators rather than on a number of input indicators



Issues in combining indicators

- **A composite index based on leading indicators**
- **The more indicators do not mean more information and discrimination**
- **Indicators should be uncorrelated as far as possible**
- **Selected indicators should capture the most significant issues**

Thumb rule for constructing an Index

- **An index is a decent proxy of reality**
- **Effectiveness of an index is inversely proportional to number of indicators used**

Art and Science of indexing

- **It is possible to construct an index within constraint of the existing data;**
- **There is no unique way of constructing an index;**
- **Comparability of countries in different geographic locations is an issue;**
- **All indicators/indices are imperfect, some are more imperfect than others**

Evolutionary Conceptual Frameworks: DPSIR

- ❖ Driving Forces–Pressure–State–Impact–Response (DPSIR) approach to organizing environmental indicators
 - ❖ UNEP adopted approach for Sustainable Consumption and Production indicators and its flagship report, the Global Environment Outlook (GEO)
 - ❖ Too complex for succinctly conveying progress to policy makers

Framework for MDGs

Goals – Targets - Indicators

MDG indicators are based on the following criterion:-

- Country by country data is available for maximum number of countries
- Time series is available to regularly report progress towards the MDGs by the Secretary General of the United Nations
- Some international organization is compiling and publishing consistent data sets on a regular basis

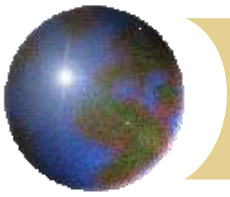
Evolving Conceptual Frameworks: Goal Setting

- ✚ Evidence that goal-setting, with clear quantitative targets, can stimulate political action
 - ✚ Outcome-based rather than process-oriented: desired effects and results
 - ✚ Outputs: monitored results of activities measured with objective and numerical performance indicators

Goal-Targets-Indicators Approach

Millennium Development Goals (MDGs): a milestone in guiding global and national development efforts

- ❖ 8 goals ranging from halving extreme poverty to halting the spread of HIV/AIDS and providing universal primary education (from 1990 to 2015)
- ❖ Time-bound targets are associated with each goal. Several targets have been reached or are within close reach
- ❖ Selected indicators assess progress from 1990 towards time-bound targets



MDG 7: Indicators

- ⊕ **Proportion of land area covered by forest**
- ⊕ **Ratio of area protected to maintain biological diversity to surface area**

- ⊕ **Energy use (kg oil equivalent) per \$1GDP (PPP)**
- ⊕ **Carbon dioxide emissions (per capita)**

- ⊕ **Proportion of population with sustainable access to an improved water source, urban and rural**
- ⊕ **Proportion of urban population with access to improved sanitation**



Keeping Track of our changing environment

(From Rio to Rio+20 (1992-2012))



Goals and Targets in Environment

- Hardly any numerical targets in environment
- MDGs 7 indicators are good for monitoring progress
- Target setting seems to work i.e. ODS, 13% under Protected Areas
- Knowledge about the state of environment is rather poor
- Scientifically reliable, time series data on Land degradation. Water quality and quantity, Ground water, Ecosystem goods and services, and many more are major missing gaps

Post-2015 agendas, SDGs

- ❖ Rio+20 Summit: start of intergovernmental process to prepare set of Sustainable Development Goals
- ❖ Agreement on need to link MDG and SDG processes for unified post-2015 global sustainable development agenda
- ❖ Continuation of MDG framework initiated in report such as , *A New Global Partnership: Eradicate Poverty and Transform Economies Through Sustainable Development*
- ❖ It proposes 12 Goals and 54 Targets

Proposal: Future Conceptual Framework

Consider adopting the **Goals, Targets, Indicators** approach as a conceptual framework

✚ Rationale:

- ✚ MDG framework based on this approach will continue to influence the UN agenda: build on this momentum
- ✚ Provide input to eventual SDGs
- ✚ provides incentives for action
- ✚ enables monitoring and tracking progress towards management
- ✚ uses multidimensional outcome indicators and achievements to influence policy