

Resilience Framework For Measuring Development

*By Anshul S Bhamra, Development Alternatives**

Introduction

Policy makers and decision makers in the world today are facing critical and contradictory challenge to ensure development for all within the capacity of the environment and natural resource base. The “business as usual” development models are clearly showing incapability to face the challenges of the present systems. The future pathways to development must holistically vision for people and planetary well-being.

Emerging recognition is also of the fact that social, economic, environmental and governance systems cannot be treated in isolation. For the systems to be concurrently aligned in the development paradigm, the first step is to develop a meta-metric framework that identifies indicators and their respective roles in the development processes. A clear comprehensive metric system that not just focuses on economic indicators but includes social, environmental and governance systems is a pre-requisite.

Framework for Measuring Resilience

One of the most critical elements of a composite meta metric framework is to provide the missing link across various actions and plans for assessing them on a common platform. Any project, activity, initiative, organization, company must be analysed from their overall impact taking social, economic and environmental needs and consequences of the action. In such a way, a city or state or a country must therefore be called developed taking in account all dimensions of development. Such a

framework shall then help us to determine systems and successful approaches to sustainable development, which envisions people and planetary well being.

Sustainable development requires humans to manage their demands on natural resources strictly within the Earth’s capacity to regenerate and measures like Economic Footprints helps us evaluate human demand on Earth’s ecosystems. Three factors determine a country’s footprint: population, consumption per person and the resource intensity of that consumption. Measuring the trends in each of these factors, and understanding the implications will help in the quest to come up with innovative ways to achieve its development goals while ensuring that future generations have the natural resources they need to prosper.

Resilience, of the social and ecological systems is a fundamental measure of sustainable development. The capacities of the systems and respond to change and to create lasting well-being for people and place are some features that closely define resilience. Resilience can be understood as an identifiable condition, embodying a core set of principles. Resilience solutions can create capacities across diverse contexts, systems and geographies while adhering to the common principles of resilience. Some key characteristics of resilience solutions are those which create following capacities:

- a) Foster flexibility and redundancy at multiple levels to ensure core systems functions
- b) Build local and regional self reliance
- c) Empower individuals and communities to control the variables vital to their personal, social, cultural, ecological and economic well-being
- d) Create diverse and accessible forms of livelihoods and local wealth ownership

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- e) Forge valued trusting partnership and rich feedback loops amongst a flexible network of people and resources that can connect and reconnect over time
- f) Facilitate continuous learning, adaptation, knowledge sharing and innovation

A set of indicators that can measure the resilient nature of development is therefore an urgent need for the world to track their steps towards sustainable development. It can help change the ideological debates on sustainable development into discussions based on empirical facts. This will lead to an understanding of what the real risks are, and facilitate development action in accordance to the needs of the case.

Nature of Resilience Indicators

The indicators have composite functions. They are used by the policy makers in developing policies for development. Indicators are also used by the people to get aware of the pros and cons of their development pathways. Academicians and technical experts utilise the same indicators to analyse and provide analysis, projections and targets of development actions.

These indicators are only of use to both policy makers and people if they are measured and

calculated to provide date. To capture such date, it must adhere to the SMART criteria of indicators.

The indicators must be specific, measurable, realistic and time bound. This is essential from the point of view of collection, compilation and further utilisation of such data.

Also, the language of the indicators should be easy to understand for local people and the policy makers. Also, as the systems are dynamic and hence continuously changing, it is important to periodically revise and adjust the indicators in accordance to the needs and perceptions of the people.

Key Measurements Of Resilience Indicator

Measurements of resilience can be enumerated in various systems:

1. Social Systems:

The status resilience in the social systems can be assessed by the vulnerability and opportunities available for each individual in the society. The resilient status of the society can be classified under four broad categories of development. The Level 1 is at the stage of basic resilience and Level 4 signifies strong resilient character. (Refer table1)

Table 1		
Levels of Resilience	Status	Indicators
Level 1	Vulnerabilities	Basic Needs Fulfilment <ul style="list-style-type: none"> • Food • Water and Sanitation • Shelter • Disaster Preparedness
Level 2	Human Empowerment	<ul style="list-style-type: none"> • Educational Status • Access to Financial Resources • Decent Livelihood Options • Access to Information and Communication Technology • Access to Transport
Level 3	Community Empowerment	<ul style="list-style-type: none"> • Social Networks and integration • Decentralisation of power and planning (like Panchayati Raj Systems in India) • Ownership of local assets
Level 4	Overall Sense of Well being	<ul style="list-style-type: none"> • Fulfilment of aspirations • Attainment of self realisation goals • Spiritual satisfaction and fruitful living

2. Environmental Systems

Assessment of environmental resilience can be done from the perspective of disaster probability and impact, state of environmental degradation and the natural resource efficiency of a system. Some of the crucial indicators for measuring resilience in environmental systems are classified in the table. (Refer table 2)

TABLE-2		
Levels of Resilience	Concern	Indicator
Level 1	Disaster Resilience	<ul style="list-style-type: none"> • Frequency of Disaster • Disaster Preparedness • Loss and Damage post Disaster
Level 2	Status Quo Environmental Quality	<ul style="list-style-type: none"> • Quality of air, water and soil • Inclusion of environmental costs in the market pricing mechanism • Maintenance of biodiversity, including agricultural biodiversity, promoting local species
Level 3	Future Natural Base	<ul style="list-style-type: none"> • Resource efficiency in production and consumption systems • Ecological Footprint

3. Governance Systems

It is important to understand that the health of governance systems cannot be assessed by indicators of development-health, education, and infrastructure but shall rather evaluate accountability and transparency in the system. It requires development of an index that can measure the same. There is a urgent need to focus on governance as the interplay of institutions, processes and mechanisms as opposed to development outcomes. Some

examples of indicators of resilience factor involved in governance systems can be seen in the listed table. (Refer table 3)

TABLE 3		
Levels of Resilience	Concern	Indicator
Level 1	Resilient Governance	<ul style="list-style-type: none"> • Accountability • Transparency • Decentralised power and control
Level 2	Integrated Development Planning	<ul style="list-style-type: none"> • Presence of city's/village's vision • Green Infrastructure • Resource efficiency in planning

4. Economic Systems

The economic systems most urgently must move beyond GDP by recognizing wellbeing and fulfilment rather than economic growth as an indicator of development (for example, Genuine Progress Index, Gross National Happiness, Index of Social and Economic Welfare, Multidimensional Poverty Index amongst others). The assessment of Gross National

Happiness (GNH), officially used by Bhutan is designed in an attempt to develop a concept that measures quality of life or social progress in more holistic and psychological terms than GDP. The economic systems must also be assessed on the production and consumption patterns of the market economy. (Refer table 4)

Table 4		
Levels of Resilience	Concern	Indicators
Level 1	Sustainable Production	<ul style="list-style-type: none"> • Use of Green Technologies • Inclusion of environmental costs in market prices • Resource efficiency of natural inputs
Level 2	Sustainable Consumption	<ul style="list-style-type: none"> • Lifestyle patterns • Per capita footprint

It must be noted that the above set of concerns and indicators are not exhaustive but only provides an base which must be built in order to develop indicators for measuring resilience and thus assessing the sustainability of the development paradigm. It is very crucial to develop and integrate these set of resilience indicators in the metrics of evaluating of sustainable development. The resilience factor deserves huge importance in the SDGs monitoring and evaluation mechanisms.

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