

**TOWARDS A SHARED UNDERSTANDING
ON ADAPTATION TO CLIMATE CHANGE:
IN THE EYES OF A COMMON BANGLADESHI**

AHSAN UDDIN AHMED

Adviser, Centre for Global Change (CGC)

Member, Campaign for Sustainable Rural Livelihoods (CSRL)

Bangladesh

National Dialogue on Adaptation, Dhaka, 28 August 2008. Organized by CSRL, BCAS, CGC and CNRS



CSRL

Defining Adaptation: What is it?

Too many definitions

Juggling with words

What's in a word? In quest of the inherent meaning

Whose definition counts?

Practicality: the notion of adaptation to be practiced

Limited participation from the vulnerable countries



CSRL

Adaptation (in natural or human systems) is response to actual or expected climate stimuli or their effects, which allow the system to moderate harm or exploit beneficial opportunities. (IPCC TAR, 2001)

Additional definitions (having limited and/or partial scope)

... adjustment in social systems

... deliberate changes

... major structural changes in a system



... a subset of climate stimuli (Smit et al., 2000)

CSRL

Practical *steps* to protect countries and communities from the likely disruption and damage that will result from effects of climate change.

For example, flood walls should be built and in numerous cases it is probably advisable to move human settlements out of flood plains and other low-lying areas... (UNFCCC website)

Is a *process* by which strategies to moderate, cope with and take advantage of the consequences of climatic events are enhanced, developed, and implemented. (UNDP, 2005)

The *process* or *outcome* of a process that leads to a reduction in harm or risk of harm, or realisation of benefits associated with climate variability and climate change. (UKCIP, 2003)



CSRL

Notion of adaptation to be practiced

Objective: ... to respond towards moderating *harm* (and/or *risks*) and to exploit beneficial opportunity ...

Harm? ... net adverse effect of climate stimuli ...

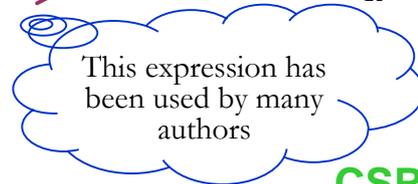
Notion of *risk*? ... a condition that puts a system into *vulnerability*

$$\text{Vulnerability} \propto \int (E * S * R^{-1}) \quad (\text{i.e., } \frac{E * S}{R})$$

E = Hazard exposure

S = Sensitivity of the system

R = Resilience of the system



CSRL

$$\text{Vulnerability} \propto \int (E * S * R^{-1}) \quad (\text{i.e., } \frac{E * S}{R})$$

E = Hazard exposure

S = Sensitivity of the system

R = Resilience of the system

E will increase with increasing CO₂ levels [higher frequency, lesser return period of an EWE, change in duration, Mostly predictable]

E will change as a nation's/community's inherent development objectives are realized

S (and to some extent E) will change depending on economic, social, cultural, political interferences

the higher the number of people in flood vulnerable zone

the more the investment in protection/EWS, the lesser the sensitivity

S and R are inversely related! Adaptive Capacity is embedded in S & R.



CSRL

ADAPTIVE CAPACITY: *The ability of a system* to adjust to climate change (including climate variability and extremes), to moderate potential damages, to take advantage of opportunities, or to cope with the consequences. (IPCC TAR, 2001 a)

The ability of a system to adjust to climate change (including climate variability and extremes), to moderate potential damages, to take advantage of opportunities, or to cope with the consequences. Adaptation can be spontaneous or planned, and can be carried out in response to or in anticipation of changes in climatic conditions. (UK CIP, 2003)

A combination of *all the strengths and resources available* within a community, society or organization that can *reduce the level of risk*, or the effects of a disaster. (Capacity may include physical, institutional, social or economic means as well as skilled personal or collective attributes such as leadership and management. Capacity may also be described as capability.) (UN/ISDR, 2004)



CSRL

Adaptive capacity – Is the property of a system to adjust its characteristics or behaviour, in order *to expand its coping range* under existing climate variability, or future climate conditions.

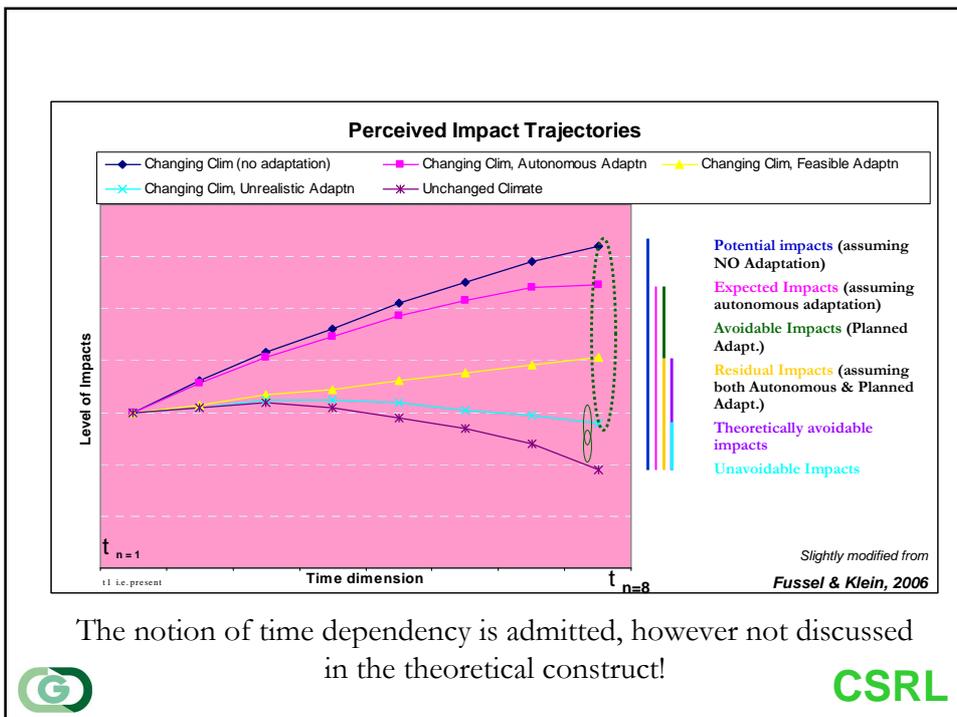
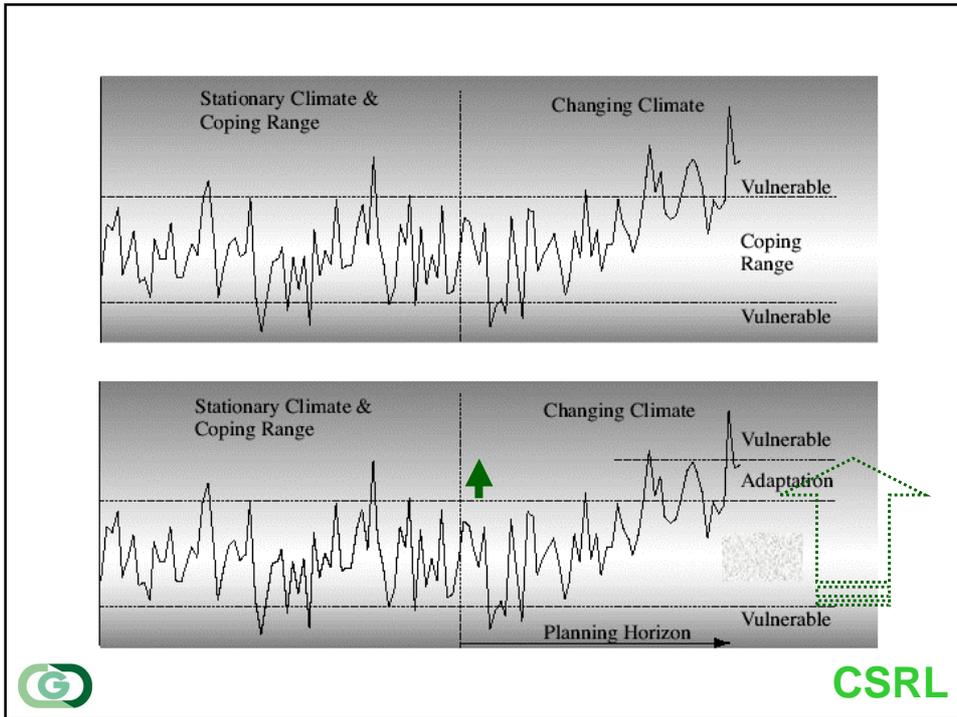
The expression of adaptive capacity as actions that lead to adaptation can serve to enhance a system's coping capacity and increase its coping range thereby reducing its vulnerability to climate hazards.

The adaptive capacity inherent in a system represents the set of resources available for adaptation, as well as the ability or capacity of that system to use these resources effectively in the pursuit of adaptation.

It is possible to differentiate between *adaptive potential*, a theoretical upper boundary of responses based on global expertise and anticipated developments within the planning horizon of the assessment, and adaptive capacity that is constrained by existing information, technology and resources of the system under consideration. (UNDP, 2005)



CSRL



The notion of **time**, the missing link in the definition of adaptation

$$\text{Vulnerability} \propto \int_{t=1}^{t=n} (E * S * R^{-1})$$

E = Hazard exposure

S = Sensitivity of the system

R = Resilience of the system



CSRL

Making the right choice(s)

Short-term versus Long-term Adaptation

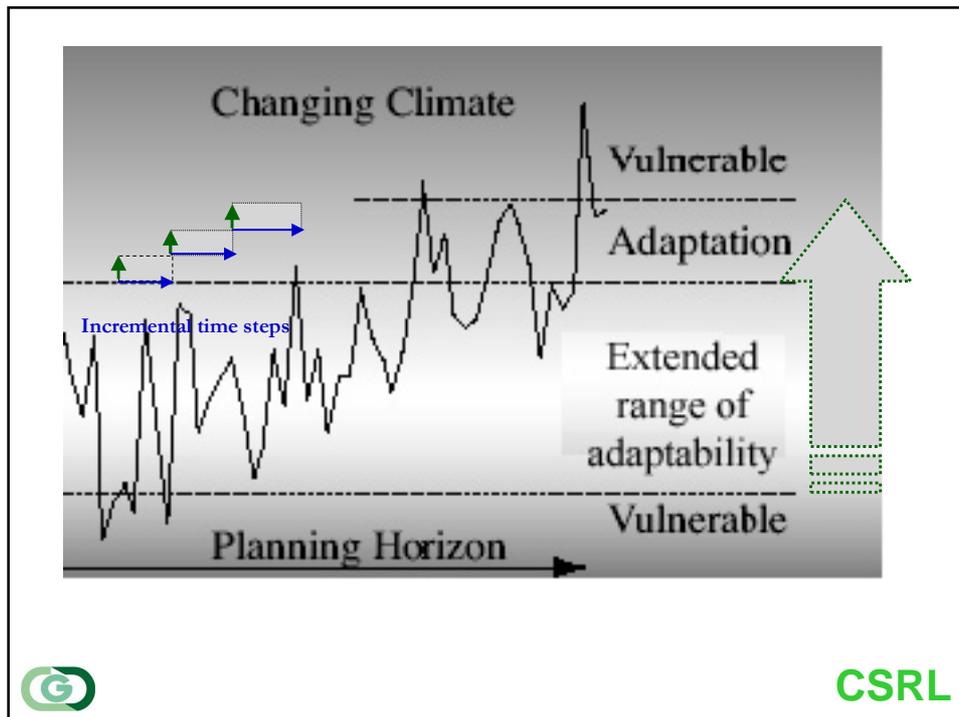
The Example: Tackling moisture stress/drought

As countries go on responding to changes, exposure and sensitivity to changed hazards would also change, so will change the residual impacts.

When t_n will arrive, the same hazard will likely to result in a different vulnerability than it was at t_1 .



CSRL



$$\text{Vulnerability} \propto \int_{t=1}^{t=n} (E * S * R^{-1})$$

E = Hazard exposure

S = Sensitivity of the system

R = Resilience of the system

When $R_n \rightarrow 0$, $V_n \rightarrow \text{infinity}$

If adaptation processes are integrated, in increments with every development planning phase, with mainstream development processes, then this situation should not arise.

Even if that happens, then 'planned migration' (within the country or in abroad) will give rise to a different state of V where E*S (i.e., risk) is rather small.

Planned out migration is then part of the adaptation framework.



CSRL

Elements of common understanding

The self-defeating Bangla interpretation of resilience (*the strength to accept consequences and merely bounce back*) should not be acceptable towards defining adaptation

The time dimension is missing in otherwise accepted definition.

Time dimension is important towards the integration of adaptation processes with development processes.

Adaptation is gradual and incremental, should ideally be integrated in small steps with every planning phase.

Adaptation is forward looking, ensures improvement in each time step.



CSRL

Elements of common understanding

(contd.)

Adaptation, perceived and implemented in one time step and kept outside the purview of regular reviewing and strengthening in the following time steps is not desirable.

Adaptation therefore is not an end result in itself, it is rather a continuous process.

Under extreme high vulnerability (i.e., infinite) facilitated out-migration should be considered as adaptation option, providing for options towards increased adaptive capacity and/or much reduced risks under climate change.

Within the provision of IPCC definition of adaptation, Bangladesh can push facilitated out-migration (of climate refugees in Annex-1 countries) as an adaptation agenda.



CSRL