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**Economics of Adaptation to Climate Change:  
Learning from Impact and Vulnerability  
Literature**

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*Economics of Adaptation to Climate Change:*

*Learning from Impact and Vulnerability Literature*

by Chandra Sekhar Bahinipati  
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# Economics of Adaptation to Climate Change:

## Learning from Impact and Vulnerability Literature

### Abstract

*In the international arena, two broad policy responses have emerged to deal with negative impact of climate change, i.e. 'mitigation' and 'adaptation'. Though adaptation is required to reduce un-mitigated climatic impact, the ongoing international climate conventions and scholarly studies have given less emphasis to it in comparison to mitigation. In climate change economics literature, the notion adaptation has been used in two discourses: 'impact' and 'vulnerability', and both are different in the context of not only addressing research question but also assessing adaptive capacity. Assuming adaptation as 'static or end-point' approach, the impact studies have estimated potential impact cost, which involves both adaptation and residual or un-mitigated impact cost, based on projected emission scenarios now and forever. The vulnerability studies, in contrast, have presumed adaptation as 'starting-point' approach, and assessed risk of an entity within the broader social, economic, political and environmental context. In the context of adaptation, the former (impact) assumes clairvoyant farmer hypothesis, and hence, suggests climate specific adaptations. The later (vulnerability), on the other hand, views adaptation as the current ability of a person to cope with risk and secure livelihoods, which in particular assessing vulnerability, who adapts and his/ her risk attitude behaviour, and process of occurring adaptations. Though the purpose of both is to reduce negative impact through adaptation, the present study surveys both the sets of studies based on two questions: how the notion of adaptation is being articulated and to what extent their findings are useful for implementing and facilitating adaptations.*

*Key Word: climate change, adaptation, impact, and vulnerability*

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### 1. Introduction



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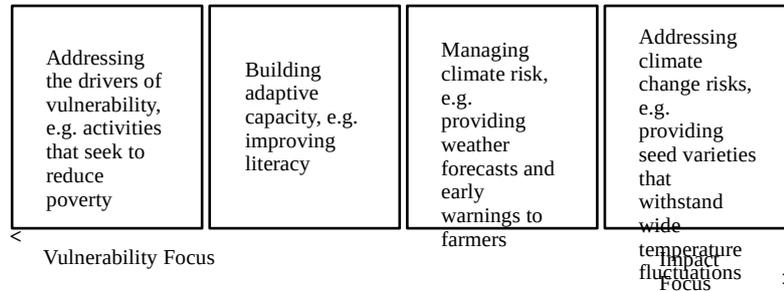
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In recent years, the scientific studies on climate change have categorically demonstrated that climate variation in the short run and climate change in the long run will have non-linear negative welfare effect in the decade yet to come, in developing nations particularly

**Figure 1:** Viewing of adaptation in both the impact and vulnerability literature



Source : Adopted from McGray et al. (2007)

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**Table 1:** *Adaptation - Definition in Climate Change Context*

*Source* : Fankhauser (1998); Schipper (2007); Ulsrud *et al.* (2008) and Smit *et al.* (2009)

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# Economics of Adaptation to Climate Change:

## Learning from Impact and Vulnerability Literature

### Abstract

**Table 1** *the international impact of two broad policy responses have emerged to deal with negative impact of climate change, i.e. 'mitigation' and 'adaptation'. Though adaptation is required to reduce un-mitigated climatic impact, the ongoing international climate conventions and scholarly studies have given less emphasis to it in comparison to mitigation. In climate change economics literature, the notion adaptation has been used in two discourses: 'impact' and 'vulnerability', and both are different in the context of not only addressing research question but also assessing adaptive capacity. Assuming adaptation as 'static or end-point' approach, the impact studies have estimated potential impact cost, which involves both adaptation and residual or un-mitigated impact cost, based on projected emission scenarios now and forever. The vulnerability studies, in contrast, have presumed adaptation as 'starting-point' approach, and assessed risk of an entity within the broader social, economic, political and environmental context. In the context of adaptation, the former (impact) assumes clairvoyant farmer hypothesis, and hence, suggests climate specific adaptations. The later (vulnerability), on the other hand, views adaptation as the current ability of a person to cope with risk and secure livelihoods, which in particular assessing vulnerability, who adapts and his/ her risk attitude behaviour, and process of occurring adaptations. Though the purpose of both is to reduce negative impact through adaptation, the present study surveys both the sets of studies based on two questions: how the notion of adaptation is being articulated and to what extent their findings are useful for implementing and factuating adaptations.*

**Key Words:** climate change, adaptations, impact and vulnerability

Note: a. The global total is aggregated by Wey (2008); b. The 96% estimate is for the expected total; c. only include market impacts; d. The national results were aggregated to regions by Tol (2008) for reasons of comparability; e. Maddison only considers market impacts on households; f. Based on different models e.g. Parallel Climate Model (PCM), Center for Climate Research Studies (CCSR), Canadian General Circulation Model (CGCM1); and g. Estimation of both experimental and cross-sectional.

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### 1. Introduction

In recent years, the scientific studies on climate change have categorically demonstrated that climate variation in the short run and climate change in the long run will have non-linear negative welfare effect in the decade yet to come, in developing nations particularly (Mendelsohn et al. 2006; Tol 2008; Tol 2008; Mendelsohn et al. 2006).

