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Food security and the ability to meet this fundamental need is without a doubt an important objective to all nations. This study deals with climate change adaptation and its costs-benefits with an empirical analysis optimizing food security related adaptation strategy over a 50-year time frame. An Empirical Dynamic Commutable General Equilibrium Model for Climate and the Economy (EDCGECE) is applied to describe the potential effects of climate change on food security and examine the implications of future strategies for Malaysia. Specifically, this study considers the potential effects of climate change on food security and explores the prioritizing of mitigation options. Different scenarios show a baseline scenario without adaptation action followed by introduction of adaptation actions. The analysis reveals important contrasts from baseline to future options over time. The results indicate that food sustainability gap in Malaysia is about 30–35% below the national targets in 2015 (baseline) and the gap is rising over time due to climatic effects in agriculture. However, applying different levels of adaptation actions, (e.g. 5–20%) food security gaps are reduced over time considerably. The projected adaptation strategies applied in this study would be effective and helpful to support sustainable food security related strategies in Malaysia.

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