

Climate Change and Thai Agriculture: Impacts and Mitigation Strategies

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Global warming and climate change is agreed to be one of the greatest threats facing the planet. Recent years show increasing temperatures, and/or increasing extremities in weather patterns in various regions. Countries are experiencing a need to protect their populations and productive capacities in the face of new climate challenges. Significant adaptation and mitigation efforts are needed in order to adapt to the new climate condition. Thailand is one of the largest world's agricultural exporters. Agriculture employs 49% of the population, tourism and fisheries along Thailand's 3,200 kilometers of coastline also play important roles in Thai economy.

The effects of climate change, including increase in temperature, floods, droughts, severe storms and sea level rise, put agriculture and aquaculture at risk. Sea level rise, a proven effect of climate change according to IPCC reports, could contribute a great threat on fresh water resources from sea water intrusion and increasing salinity, which impact on agriculture in the lower central plain. Higher sea level leads to less shoreline along the coasts, and loss of mangroves and aquaculture farm areas in the south. During the past decade, weather patterns in Thailand have fluctuated from severe droughts to severe floods; generally greater drought in the north and northeast, and more floods in the south. The impacts of higher temperature include higher rate of water evaporation and more frequent but concentrated rain in specific areas. The changes in rain pattern alter water flow, affect ecosystem and crop calendar, reduce aquatic abundance for fisheries, and pose major impacts on food crops.

Not only is the agricultural sector forced to adapt to challenges involving new climate and soil conditions, more severe weather patterns, and changing water availability scenarios, it is pressure to mitigate for extensive contribution to greenhouse gases emission. Chemical fertilizer use in farms contributes to the emissions and decreases soil fertility. Policies to promote a use of bio-fuel and organic fertilizer; reduce plough and deforestation; increase replanting; improve better water management and new cropping system could help in mitigation process. Currently implemented mitigation strategies include development of network on climate change research and development, and farm network for local water management; improve modeling for effective forecasting and warning system; improve production technology, breed varieties, and planting schedule; and improve

water and soil management, livestock and integrated farming approach.

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