This paper examines the impact of farmers' perceptions of temperature change on the implementation of environmentally friendly agriculture in their farms. Based on the data collected from 611 smallholder rubber farmers in Xishuangbanna Dai Autonomous Prefecture (XSBN) in the upper Mekong region, an endogenous switching probit model along with a counterfactual analysis is applied to estimate the impacts of farmers' perceptions of temperature change on the implementation of environmentally friendly rubber plantation proxied by the intercropping system. The results show the monoculture was the dominant planting system of rubber plantations in XSBN, whereas only 18% smallholder practiced the rubber intercropping system. While the real average temperature per year in XSBN increased from 23.83 Celsius in 2000 to 24.96 Celsius in 2014, only 59% of respondents perceived an increasing trend, and over 38% perceived no change. The estimation results suggest that for the smallholders without perceiving increasing temperature if these smallholders perceive increasing temperature, this would result in a 37.3% increase in the likelihood of implementing rubber intercropping. The findings not only provide a significant reference for the policy-making on promoting environmentally friendly rubber plantation in the Mekong region but also complement the empirical evidence regarding farmers' perception of, and adaptation to climate change.