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Coping with Climate Change and its Impact on Productivity, Income, and Poverty: Evidence from the Himalayan Region of Pakistan

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Abstract

The current study explores the climate-risk mitigating strategies adopted by farmers and their impact on household income, poverty levels and wheat yield in the Himalayan region of Pakistan. This study is based on a primary dataset collected from 500 farmers through a field survey from the seven districts of the Himalayan region of northern Pakistan: Ghizer, Gilgit, Diamer, Astore, Skardu, Ghance, and Hunza-Nagar. A multivariate probit was employed to estimate the determinants of choice of adaptation strategies by farmers and a propensity score matching approach was used to estimate the impact of coping strategies on wellbeing. The most common climate-risk management strategies adopted at farm level include an adjustment in the sowing time, adoption of resistant varieties, tree plantation, non-farm participation as well as crop-livestock interaction. The impact of all these risk-management strategies was estimated individually as well as jointly. The empirical results indicated that farmers with higher levels of education and secured land rights mostly adopt more climate-risk mitigating strategies. The overall PSM results show that household income levels are high (in the range of PKR 1658-2610 per month), indicating that those households adopting climate-risk management strategies have

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