Deforestation is one of the main drivers of climate change. Proposals to mitigate emissions of greenhouse gases include financial incentives for farmers to reduce land clearing. Depending on their design, Payments for Environmental Services (PES) may decrease rural poverty and contribute to food security. In Amazonia, frontiers expansion through massive colonization, associated with a lack of economic incentives and technical assistance, have resulted in poverty and environmental degradation. Since 2013, as part of an initiative supported by the Amazon Fund, 350 families living in the state of Pará have been receiving conditional payments and technical assistance aimed at developing more sustainable farming systems. Our objective in this research was to analyze if and how those changes are unfolding at the ground. We conducted three surveys in 2014 (baseline), 2015, and 2017. We interviewed 425 heads of households (333 recipients of PES and 92 in a control group). Initially we compared families who receive PES with the control group and detected no significant differences. In a second step, we accounted for the existing heterogeneity of land use and performed a cluster analysis amongst PES beneficiaries. We identified four clusters, according to how much land farmers allocate for: 1) conservation of native forest; 2) agriculture (annual and perennial crops); 3) pasturelands and; 4) fallow or abandoned areas. Farmers who responded best to PES were those with: a) larger areas of forest, b) efforts focused on annual and perennial crops (clusters 1 and 2). We detected an inferior economic and environmental performance among farmers who focus on livestock and have larger abandoned areas (clusters 3 and 4). PES do not seem to be effective to curb deforestation within these two clusters. When comparing clusters 1 and 2 with the control group, we did detect a positive variation in family income, which will likely become more evident in the future because farmers within those clusters invested in perennial crops. Our findings show that PES were more effective in farms that are less degraded and more diversified. Changing land-use in farms where land-clearing has already advanced need complementary policy tools and market incentives.