Because rural poverty and low agricultural productivity are closely related, governments often actively pursue policies designed to boost productivity and incomes in the poorest regions. This paper examines why such large variations in agricultural productivity occur and identifies policy instruments that can be used to boost productivity. The paper also identifies the limits that nature and natural risks place on policy. After selectively reviewing the recent literature on the determinants of agricultural productivity, the paper discusses productivity outcomes in the context of endogenous choices by farmers on farming techniques. The paper examines the implications of this endogenous choice for least-squares and stochastic frontier estimation techniques and reports on new results from farm-level studies in Ecuador and Nicaragua.