

# Rural Development Policies and Sustainable Land Use in the Hillside Areas of Honduras

## A Quantitative Livelihoods Approach

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The government of Honduras is becoming increasingly concerned about slow progress in combating rural poverty, which is especially stark in the hillside areas. While both policymakers and donors are under strong pressure to provide adequate interventions, the government and its development partners have insufficient information about what drives sustainable rural productivity growth; they therefore have little guidance on how to prioritize expenditures and develop strategic directions for the rural sector.

This report provides policymakers and stakeholders in Honduras with empirical information about livelihood strategies employed in the country's hillside areas, existing poverty-alleviation opportunities, and potential policy and investment priorities, based on extensive survey data for 376 farm households, 1,066 parcels, and 2,143 individual plots located in 95 rural hillside villages in Honduras.

### MAJOR FINDINGS

Households in the rural hillsides of Honduras have widely differing asset endowments and livelihood strategies. Households that rely on basic grain farming are the poorest because they are often located in isolated areas with relatively poor agroecological and socioeconomic conditions. Opportunities for off-farm work tend to be limited in these areas, and household strategies that combine on-farm work with off-farm work generate higher incomes.

Soil fertility has a strong, direct, and positive impact on income, while agroclimatic conditions such as higher rainfall and altitude have an indirect positive income effect because they stimulate more remunerative livelihood strategies. Land is not the key constraint limiting the potential for higher incomes in the study regions; more land per se does not lead to higher income per capita, and households with less land are able to compensate by obtaining higher productivity or by pursuing off-farm activities. Land tenure also has no impact on crop productivity and household income, but adoption of sustainable land use practices is higher on owner-operated plots than on leased ones.

Ownership of machinery and equipment enables households to raise labor and land productivity and is especially helpful for households with relatively high opportunity costs for labor, such as those pursuing off-farm employment or coffee production. Livestock ownership, on the other hand, has no significant direct impact on crop productivity and per capita income.

Human capital variables have mixed impacts. Households whose members have more formal schooling have higher perennial crop productivity, but education has no statistically significant impact on per capita income. Households with higher dependency ratios follow less remunerative livelihood strategies and have lower per capita income. After controlling for other factors, the sex of the household head has no significant effect on crop productivity or per capita income, but it does influence some land-management and input-use decisions. Hillside households do not generally receive significant amounts of remittances, so migration has no significant impact on per capita household income.

With the notable exception of agricultural training programs, household participation in other training programs and organizations was found to have only limited effects on crop productivity and income. However, several of these programs are important for the sustainability of agricultural production: agricultural extension in particular plays a key role in promoting the adoption of sustainable production practices.

Geographic determinants also have fairly limited impacts, even though they do influence land-management practices, external inputs, and labor use. Road density has no statistically significant direct effect on per capita household income, despite its positive effect on the productivity of perennial crops, although it may indirectly help to generate higher incomes by promoting livelihood strategies other than the production of basic grains. Better market access is weakly associated with higher value of production of perennial crops but not with higher income.

Population density also has limited direct impact on crop productivity and per capita income, though it may have indirect effects via farm size and livelihood strategies.

## POLICY IMPLICATIONS

These findings suggest there are no easy and straightforward ways to combat poverty in the rural hillside areas of Honduras. Many households have few assets other than (unskilled) family labor and some land. This leads to a strong food-security focus, whereby most land and labor resources are allocated to the production of maize, beans, and sorghum using traditional, low-productivity technologies. Many households seem to be locked in a vicious poverty cycle that prevents a transition to other income-earning strategies that could be more profitable.

Though agriculture can potentially help break this cycle as an integral part of the rural growth strategy in hillside areas, it alone cannot solve the rural poverty problem; those remaining in the sector need to be more efficient, productive, and competitive. In particular, public investment programs may want to focus on broadening the physical asset base of poor households and extending the coverage of agricultural training. Investments in physical assets should primarily target crop producers and perhaps also households that have relatively high opportunity costs for labor. Agricultural training activities can focus profitably on development of livestock production.

Public investments may yield a significant positive impact on income, poverty reduction, and the productivity and sustainability of agricultural production in a number of other areas. Improving road infrastructure is likely to stimulate livelihood strategies that emphasize off-farm work, yielding higher returns to smallholders than working on their own farms. Family-planning programs that succeed in

lowering both household size and dependency ratios may also help in raising per capita incomes.

Agricultural extension programs and conservation-oriented training programs that make a significant contribution to maintaining and improving soil fertility can help improve household incomes as well. Though this will increase yields in the long term, land-saving production technologies are needed to raise the productivity of annual crops (particularly basic grains) in the short to medium term. Given Honduras' current limited capacity for agricultural technology research in this area, the government may try to find ways to introduce and disseminate appropriate agricultural technologies that have proven successful elsewhere under similar conditions; hence, adequate consideration of local conditions is critical.

Improving access to land (not land titling per se) can also have an indirect positive impact on income by enabling households to pursue more remunerative livelihood strategies such as livestock production. Given the inverse farm size-productivity relationship in the hillside areas, improved land access in the form of land rental markets could also increase total crop production by enabling more productive smallholders to expand their production. Land redistribution programs seeking to increase smallholder land ownership may also be justified on the basis of sustainability considerations, since the adoption of certain soil conservation practices is larger on owned land than on rented land.

Finally, in order to capitalize on the rapidly increasing importance of the migration phenomenon, the government should consider providing basic training to assist prospective migrants, supporting community-based initiatives aimed at investing remittances in a productive way, and improving financial systems to lower the transaction costs and risks associated with remittances.

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