Examining success of empowering poor through microfinancing in rural Thailand

Over the past few decades, developing countries have increasingly used microfinance, the practice of making small loans to the working poor. TrickleUp, Kiva.org, and more than 3,6000 microfinance institutions worldwide offer hope for a more cost-effective method of empowering the poor. However, until now, little academic research has looked at the loans' actual impacts.

Ohio State University economist Joseph Kaboski, Ph.D., and his colleague, Robert Townsend, Ph.D., of the University of Chicago, examined whether the "Million Baht Village Bank" microfinance initiative helped increase consumption, investment and income growth among poor households. They also analyzed the program's impact on default rates, education, savings and job mobility in rural and semi-urban Thailand. The program, initiated in 2001, transferred one million baht to nearly 80,000 Thai villages to start local lending banks.

"The unique structure of this program gives us a laboratory for evaluating the program and also theories about how households cope when credit is limited or difficult to obtain," said Dr. Kaboski. "By using the supercomputers at OSC, we were able to efficiently solve and estimate rich models of household economic behavior and compare our predictions to the actual program."

Drs. Kaboski and Townsend found that microfinance has very large impacts on consumption, which are consistent with a model in which households build buffer stocks of savings to protect against adverse shocks when credit is unavailable, somewhat smaller impacts on investment. Still, because households bear interest costs of credit, they found transfer payments are more cost-effective than microfinance. ■

Project lead:
Joseph Kaboski, Ph.D.,
The Ohio State University
Research title:
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Satellite measurements provide key to estimating Amazon River discharge

The vast fresh-water Amazon floodplain plays an important role in climate changes, biogeochemical fluxes, wetlands ecology and flood hazards. Yet, scientists really don't know exactly how much water courses through the world's largest river.

Building on his earlier work modeling flood patterns of the Amazon, Ohio State University Earth scientist Doug Alsdorf, Ph.D., has joined colleagues at the University of Bristol, the University of Washington and the NASA Jet Propulsion Laboratory to better understand the dynamics of the Amazon.

NASA's proposed Surface Water and Ocean Topography (SWOT) satellite mission, with a launch expected 2013-16, will use radar altimetry to provide high-spatial resolution, global measurements of ocean surface topography and surface water elevations. For the terrestrial branch of the mission, SWOT will measure water storage changes in all rivers, lakes and wetlands.

Using Ohio Supercomputer Center resources, Dr. Alsdorf and fellow OSU research scientist Michael Durand, Ph.D., plan to incorporate those measurements into the LISFLOOD-FP hydrodynamic computer model to more accurately estimate river depth and slope, which are needed to calculate the waterway's discharge. OSC researcher Judy Gardiner, Ph.D., adapted the program to the parallel processing platform of the Center's IBM Cluster 1350.

"Fresh water is a basic requirement for life, yet surprisingly, our knowledge of the volume and fluxes of water on floodplains and in rivers is poor," said Dr. Alsdorf. "Using synthetically produced SWOT measurements in two proof-of-concept experiments, we found that we will be able to estimate river depth and slope to within fractions of a meter and centimeters-per-kilometer, respectively." ■

Project leads:
Doug Alsdorf, Ph.D., &
Michael T. Durand, Ph.D.,
The Ohio State University
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swath altimetry
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