outcome HIGHLIGHTS

Farmers replanting rice seed-lings in Xieng Khuang Prov-ince, Lao PDR. Intensive rice cultivation is generally associ-ated with higher welfare. Yet the high-resolution poverty maps featured here revealed areas where agricultural intensification had failed to lift peasants out of poverty.

Photo: Peter Messerli

NCCR north south

Atlases of human welfare

Mapping poverty and charting paths to prosperity in Southeast Asia

In brief

- NCCR North-South researchers have led efforts to transform complex socio-economic data into readable maps

- The atlases and web-sites created for Viet-nam and Lao PDR led government officials to adopt spatial aspects into population data and inspired more transpar-ency and data sharing

- The maps enhanced gov-ernment and outside aid agencies' ability to target aid to the poor, including UN World Food Pro-gramme work on food security and UN Popula-tion Fund support for maternal health

Research featured here was con-ducted in Lao PDR and Vietnam

Locating those in need

In September 2000, all UN member states – among them the Lao People's Democratic Republic and Vietnam – agreed to eight Millennium Develop-ment Goals, the first of which was to halve the number of poor and hun-gry people by 2015. To truly help the world's poor, however, we must know where they live, who they are, and as much as possible about the causes of their poverty.

NCCR North-South programme par-ticipants and partners (see back) have led efforts to use geographic informa-tion systems – computer programs that transform complex population statistics into readable maps – to cre-ate detailed atlases of human welfare in developing countries. The maps enable policymakers and develop-ment partners to see where poor peo-ple are clustered and identify spatially relevant contributors to their plight.
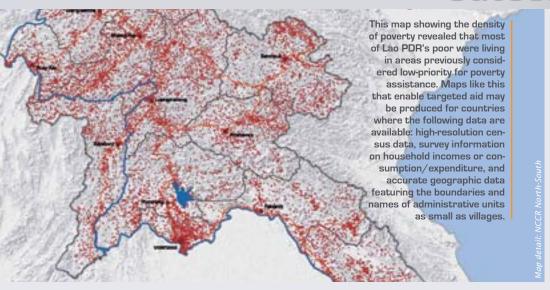
Programme involvement in poverty mapping began small and grew: a PhD project in Vietnam led to a detailed socio-economic atlas produced in a PAMS project (see back). The atlas's success – including wide dissemina-tion and adoption of its methods by

Vietnamese government officials and cooperating NGOs – generated the support to replicate the approach in neighbouring Lao PDR. With funding from the Swiss Agency for Develop-ment and Cooperation (SDC), NCCR North-South researchers spent sev-eral years creating similar maps for Lao PDR in close collaboration with the Lao Department of Statistics. The joint effort built trust and encour-aged openness.

Estimating household poverty

Using Lao PDR's 2003 Expenditure and Consumption Survey and linking it to the 2005 Population and Housing census, NCCR North-South research-ers and their partners applied an innovative method called "small-area estimation" to calculate localised measures of poverty and inequal-ity. By linking household character-istics found in both the census and the household expenditure survey to financial information contained only in the expenditure survey, the researchers created an equation to estimate the expenditures of every household in the census. The result-ing household estimates, in turn, were aggregated to approximate the percentage and absolute num-

This map showing the density of poverty revealed that most of Lao PDR's poor were living in areas previously considered low-priority for poverty assistance. Maps like this that enable targeted aid may be produced for countries where the following data are available: high-resolution census data, survey information on household incomes or consumption/expenditure, and accurate geographic data featuring the boundaries and names of administrative units as small as villages.

Map detail: NCCR North-South

NCCR north south

ber of poor for individual provinces, districts, and villages. Finally, the localised statistics were transformed into colourful, high-resolution maps that allow observers – specialists and non-experts alike – to view the distribution of poverty across the country and ponder its relationship to other features that vary over the same space, such as the landscape, climate, or infrastructure.

Maps provide new insights
Careful study of the estimates and maps produced useful insights. Examination of spatial patterns revealed, for instance, that the majority of Lao PDR's poor live in wealthier districts, in densely populated cities and the Mekong corridor. Analysis of inequality showed another trend: as the share of a district's population living in urban areas increased, the level of inequality also increased. Yet high inequality was also found in economically underdeveloped rural areas – an observation at odds with conventional wisdom associating wealth disparities with centres of economic growth where competition is fiercer. Turning to topographic and climatic causes of poverty, it was found that terrain roughness and rain seasonality were linked to rural poverty. Finally, people's access to markets – travel time to towns – played a key role in many agricultural areas' poverty rates.

Sharing data to improve aid
The innovative collaboration between researchers, government staff, and development practitioners paid dividends in information sharing and value added. At an atlas launch event, Lao PDR's Vice Minister of the Ministry of Planning and Investment publicly announced that the maps' insights would be used in their next five-year plan and that such data would be gradually made available to the wider public. His statement indicates growing governmental openness to large-scale data sharing, likely encouraged by the researchers' proactive media work, seeking of policy dialogue, and the high quality of the finished atlas – published as a book – and corresponding website (www.laoatlas.net). Downloaded more than 30,000 times to date, the atlas has reached numerous people and improved the interventions of diverse local and international aid organisations, including the UN World Food Programme and the UN Population Fund.

Most recently, a new open-access website, Lao DECIDE info (www.decide.la), was cooperatively launched to ensure continued, enhanced availability of the maps and data to all those who might contribute to improving Lao PDR's socio-economic landscape.

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- International Food Policy Research Institute, USA
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Further reading
Epprecht M, Heinimann A, editors. 2004. *Socioeconomic Atlas of Vietnam. A Depiction of the 1999 Population and Housing Census.* Bern: Geographica Bernensia & NCCR North-South.

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Outcome Highlights feature effective collaborations between researchers, policymakers, practitioners, and local communities in the NCCR North-South network.

Partnership Actions for Mitigating Syndromes (PAMS) are pilot projects designed to test NCCR North-South research in real-world settings. Developed jointly by researchers and local stakeholders, they aim to promote mutual learning and reveal paths to sustainability.