

- f) Labour markets changed in terms of increased real wages of labor, increased migration and spatial integration;
- g) Welfare and development programs of the government have helped households in coping with income shocks; and
- h) Organization of women into self help groups has reduced dependence on money lenders for small loans.

Policy implications for rainfed agriculture

To enhance sustainability of livelihoods in drought-prone areas there should be a provision of supplemental irrigation. Public investment in water conservation and recycling has to be strengthened. Food stamps may be given to the households below the poverty line in lieu of Public Distribution System subsidy. Minimum support prices provided for rainfed crops have to be backed up by procurement mechanisms by the government.

Impact of VLS

Over 150 papers and three dozen doctoral dissertations were based on empirical analysis of VLS data in the semi-arid tropics of India and

West Africa. A recent search in GoogleScholar shows that this body of work has generated over 10,000 citations. About 90% of these citations came from work that was published between 1986 and 2000, and it is still being cited even years after data collection had ended. These results strongly suggest that significant benefits accrue long after the work is formally completed. Stefan Dercon of Oxford University and his co-authors, among others, have a very high opinion about the impact of VLS.

Moving forward

The VLS enquiry is being deepened to include social and climatic aspects, such as vulnerability to climate change, adaptation strategies and layers of resilience, social networks, and smallholders' investment in natural resource management, among others. Drivers that help in moving out of poverty and achieving food and nutritional security shall be identified.

In short, it is immensely clear that the data obtained through the Village Level Studies has been and is continuing to be essential for forging development pathways to improve the livelihoods of the rural poor in the semi-arid tropics.

Village Level Studies

An IPG that contributes to the global knowledge base on rural households



About ICRISAT



The International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) is a non-profit, non-political organization that does innovative agricultural research and capacity building for sustainable development with a wide array of partners across the globe. ICRISAT's mission is to help empower 644 million poor people to overcome hunger, poverty and a degraded environment in the dry tropics through better agriculture. ICRISAT belongs to the Alliance of Centers of the Consultative Group on International Agricultural Research (CGIAR).

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INTERNATIONAL CROPS RESEARCH INSTITUTE FOR THE SEMI-ARID TROPICS
Science with a human face

Introduction

Generally, the voices of the poor are muted. They do not resonate in agricultural statistics and in decision making on policy, because reliable and timely data on consequences of change on the rural poor are not available. Decisions made on incomplete information may be quantitatively accurate, but in terms of the dynamics of the changes, they are fuzzy, anecdotal and fragmented.

The ICRISAT Village Level Studies (VLS) were initiated to enhance the availability of reliable household, individual, and field-specific high-frequency, time-series data in purposively selected villages in the semi-arid and humid tropics of South Asia. VLS provide the most efficient way to understand the farming systems in rural areas, and to identify the socioeconomic constraints faced by the farming community in the semi-arid tropics (SAT).

ICRISAT started its VLS in three regions in the semi-arid tropics of peninsular India in 1975. In one of the two villages in each region, panel data collection continued until 1984-85. In the early 1980s, VLS were also undertaken in six villages of Burkina Faso and four villages in Niger in West Africa. The early 1980s also saw the expansion of the VLS to two other SAT regions of peninsular India in partnership with state agricultural universities.

The VLS was closed in 1985 due to funding difficulties, though special purpose surveys were carried out in 1989, 1993 and 2000 in some of



ICRISAT scientists lead a wealth ranking exercise in Kanzara village, Akola District, Maharashtra.

the villages. With limited core support and fragile special project funding, the VLS were re-opened in 2002, at first with low frequency rounds and since 2005-06 with higher frequency interviews, in the initial six villages. At present, the VLS are strengthened by funding from the Bill and Melinda Gates Foundation (BMGF) to enhance the quality and utility of output.

Need for VLS

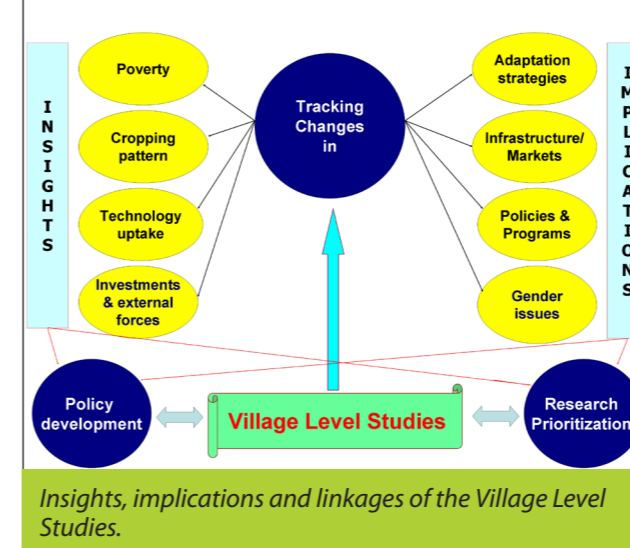
There is a robust demand for time-series data at the level of villages, households, individuals, and fields, generated under the VLS. The vision is to considerably increase the supply of time-series panel data that addresses the dynamics of economic, social and political development in the semi-arid and humid tropics in South Asia.

Objectives

- To track changes in the livelihood options of the rural poor
- To understand farmers' response to changing markets, policies and technologies
- To understand farmers' perceptions on climate change and their coping mechanisms
- To provide a socio-economic field laboratory for teaching and training of students and researchers
- To understand the dynamics of agricultural transformation.

Role and recognition of VLS

The VLS data bank is equivalent to the "Gene bank" of biological scientists. It provides the testing grounds for ICRISAT technologies. With its uniqueness in longitudinal household panel data,



the VLS database is now a very valuable and useful international public good (IPG).

Linking climate change with VLS

Climate change/variability is becoming prominent and farmers, especially the poor ones, are vulnerable to climatic shocks. The adaptation strategies of village communities need to be assessed and improved upon. The project on *Vulnerability to climate change: Adaptation strategies and layers of resilience* aims at providing science based solutions to rural poor and most vulnerable farmers in terms of adaptation strategies, among others. This will involve a more in-depth enquiry on farmers' perception of changing climate. The new insights obtained will be complemented with the long term behavioural changes observed in the ICRISAT-VLS data (1975 till date) to enable the identification and prioritization of sectors at risk, and the development of gender-equitable adaptation and mitigation strategies, as an integral part of the agricultural development program in less favoured areas.

What the VLS can do?

VLS provide a "laboratory" to undertake research on a variety of topics in great detail as the need arises. They are multi-disciplinary in nature integrating biological, technical, social, and economic approaches. They produce exceptionally high quality data from continuous engagement, and facilitate the study of seasonality and the intensive scrutiny of social networks. They also enable the measurement of agricultural, income and consumption risks, and therefore permit the evaluation of production,

consumption, investment, agricultural, and social behaviours under risk.

VLS capture shocks that affect household welfare over a long period of time and thus establish a basis for assessing adjustments to risk from specific sources. They provide the capability to trace seasonal, annual, and long-term changes in well-being that is conducive for the study of the dynamics of poverty and wealth acquisition. They enable the study of pathways in which new technologies, policies and programs impact poverty, village economies and societies. They also enable the evaluation of the evolution of village economies over time and across villages.

Key findings

Some important findings of the VLS are:

- The drivers of change are surface and groundwater irrigation, technology adoption and non-farm income;
- Proportion of incomes from non-farm sources, migration and caste occupations increased, while that of farm income decreased;
- Demand for draft animals reduced due to use of tractors;
- Annual per capita income increased from Rs 3466 in 1975-78 to Rs 8013 in 2001-06;
- Farmers invested little on soil conservation measures but heavily on groundwater exploration;



Interviewing a farmer family in West Africa.

Changes (%) in sources and household net income in the VLS villages

