

Box 2. Impact of the ICRISAT VLS on research direction and on constraints to adoption

In contrast to the discussion in Box 1, we can cite specific examples where the VLS did influence research emphasis and technological design and contributed to hurdling policy obstacles that impeded the adoption of desirable technologies.

The herbicide story. Whether or not ICRISAT should allocate more resources to herbicide research and to weed science was a relevant issue in the 1970s. Three types of information, generated in the VLS, pointed to a shared finding: in India's SAT herbicide research was not a priority at that time. Based on plot data from the VLS on the timeliness and intensity of weeding, and on investigators' counts of weed species and their incidence in common cropping systems, ICRISAT agronomists and economists established a significantly positive relationship between crop value and soil fertility on the one hand and the intensity and timeliness of weeding on the other. Hence, little in the way of yield increases would be forthcoming if herbicides were applied to higher value crops in more fertile environments. Investing more in herbicide or in traditional weed control would not pay in more marginal tracts because productivity was constrained by erratic rainfall and low soil fertility. The key empirical issue, therefore, centered on the scope for herbicides to reduce the cost of the traditional methods of weed control in higher-valued cropping systems.

Secondly, data collection on the employment of labor in the VLS has always been gender specific, and a second strand of information showed that earnings from hand weeding constituted a significant share of women's wage income in all the villages. Thus, any reduction in hand weeding hours made possible by herbicides would primarily reduce work and income opportunities of the most disadvantaged labor group, female agricultural workers.

Thirdly, the analysis of merged VLS and experimental data in the form of partial budgets indicated that the use of herbicide did not approach profitability in any of the more intensive dryland cropping systems. Based on these findings, ICRISAT did not invest in herbicide research. Today herbicide use is still negligible in the villages with the exception of irrigated cultivation in the region of highest production potential where partial adoption of herbicide has occurred since the mid-1980s.

The Maruti Story. Although the initial VLS formally closed in 1985, contact was maintained for 17 years prior to the re-initiation of the studies in 2002. Before the 1987 rainy season, ICRISAT's principal pigeonpea breeder traveled to Kanzara village in central Maharashtra to test a novel short-duration varietal type with the investigator who had lived seven years in the village. After explaining the attributes of short-duration pigeonpea in a village meeting, one of the VLS respondents invited the breeder to his house for tea and told the breeder that the new variety and cropping system sounded interesting, but it was not what farmers desired. Farmers wanted medium-duration pigeonpea that tasted good in a background resistant to wilt and suitable for intercropping. On the 12-hour drive back to ICRISAT Centre, the breeder thought about his conversation with the farmer and, on arrival, gave the investigator several kgs of ICP 8863 (Maruti) that he felt matched the farmer's profile of desirable traits and which had been released in a neighboring state but which was unavailable in Maharashtra. In 1992, 40 women from respondent households in Kanzara were invited to ICRISAT Centre for a women's farmer day. They were asked what benefit they had received from the VLS. Maruti appeared at the top of the list. In 1995, in response to burgeoning farmer demand, the Maharashtra State Seed Corporation started to supply Maruti even though the variety had not been released in the State. Today Maruti is the most popular pigeonpea variety cultivated in Maharashtra, the largest producing state in India.