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The South Asia Food and Nutrition Security Initiative

A PICTURE IS WORTH A THOUSAND WORDS

Development interventions like projects supported by the World Bank all intend to have impacts that outlast the life of the projects themselves. Establishing a useful source of information that project participants and their neighbors can continue to use is one of the most effective ways to achieve this. This is not information about them that is collected and analyzed by outsiders; it is information that comes from them. They are the agents who actively collect and use it. One of the challenges that emerges right away however is how to present that information in a way that is readily accessible and straightforward, including to those who may lack literacy or numeracy, as is the case in so many rural settings. Information graphics is a means of making complex quantitative information readily understandable and relatable in a way that enables people to draw comparisons and to track changes over time.

The Pudhu Vaazhvu Project (PVP) in Tamil Nadu is making purposeful use of information graphics through participatory data visualization and tracking, or "P-tracking" as it is more often abbreviated. The PVP is a community-driven development, poverty reduction operation being carried out by the state government through its Department of Rural Development and Panchayat Raj with technical and financial assistance by the World Bank. The P-tracking system developed in collaboration with project participants is used to periodically monitor a number of important indicators relating to livelihoods, health, nutrition, food security, and household well-being. The participants are

members of women's self-help groups which have been engaged in PVP empowerment-related activities over time, making them natural partners to have "on the ground." Women's self-help groups throughout much of rural India generally are often seen as optimal such partners given their activism, purposefulness, and storied history of effective mobilization for social and economic purposes.



PVP SHG members looking at the prototype visualizations
(Photo credit: Ramya Parthasarathy)

Designing the visualizations used to undertake P-tracking would begin with focus group discussions in which the self-help group members were solicited for their views about

the quality of life, and about the elements that make up a “good life.” These needed to be articulated in the form of indicators that could be readily monitored. A pilot was carried out in the Theni district of southwest Tamil Nadu where 32000 women belonging to self-help groups active in the PVP were surveyed in focus groups in 80 *gram panchayats* – the village level institutions at the base of Indian states’ *panchayat raj* systems of local government. The process of interviewing focus groups was then aggregated up to the district, block, and state levels, culminating in the composition of a questionnaire. The questions themselves reflected the women’s priorities and concerns basic issues like sanitation and nutrition, as well as matters of empowerment like women’s roles in household decision making and political participation.

The women’s visualization of marriage for instance began with a simple flower icon in which the height of the flower represented the marriage’s length, and the number of leaves represented the number of children. The use of a more abstract flower icon rather than a human figure made more potentially sensitive matters

easier to discuss, for instance a blossom was used to indicate whether the marriage was consensual, and the color of the flower itself whether the marriage was to a blood relative.

Visualization of assets placed important property items like a house, land, different livestock animals, a motorbike and so on into a box to represent what the household owns or has owned. Items that have recently been lost are circled in red, and those which have been acquired are circled in green. Arranging these images together provides a very quickly understandable schematic of how well or poorly a village is doing.

Daily diets were represented by plates upon which food items like rice, papaya, chicken, and eggplant are placed, their size reflecting how often they were eaten. Here too, the women’s feedback quickly made the representation more familiar by changing the plate into a far more familiar banana leaf, and the imaging would be adapted to reflect local diets as the exercise was scaled up and introduced across different villages and districts.

Women’s roles in household decision making regarding matters like asset management, bank loans, children’s healthcare and education, clothing, and so on. A series of iterations were involved in familiarizing the women with histograms that dispense with the use of icons to simply capture relative proportions.

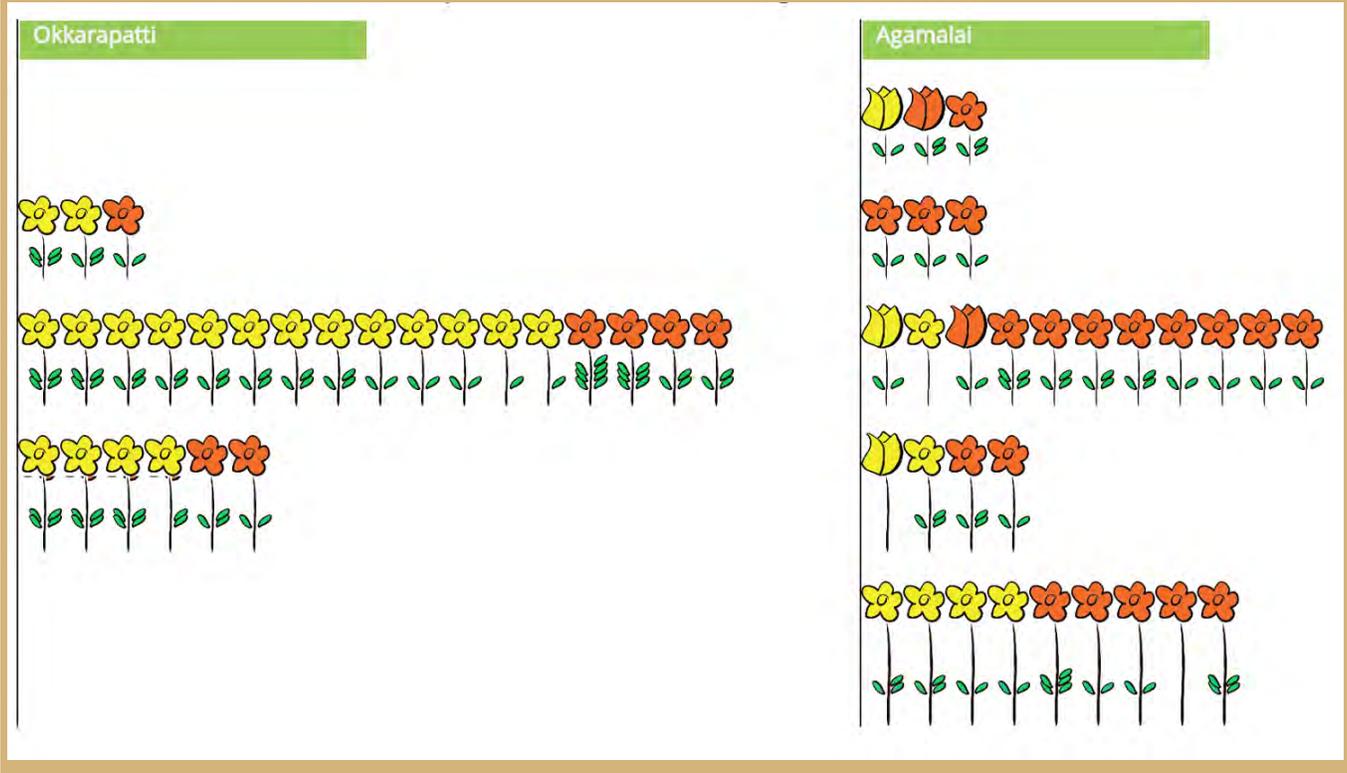
The prototype developed through the 2,000-woman pilot in Theni district would lead to a list of 72 multiple-choice questions that was scaled up into a participatory survey of 32,636 women self-help group women elsewhere in Tamil Nadu where the PVP was active. The design ensured that the questions and the visualization of results in schematic forms remained readily accessible to even the least literate and least numerate women.



Women in tribal areas giving their feedback on the initial visualizations (Photo Credit: Jeyachitra P.)

Flowers and marriage: community created visualizations based on marriage

Each flower depicts a bundle of indicators pertaining to marriage. One flower represents one married woman. The height of the flower corresponds to the age at marriage where shorter flowers are women that got married at younger ages. The color of the flower represents whether the marriage was with a blood relative (red) or not (yellow). The type of flower represents whether the woman gave consent (bloomed) to being married or not (unbloomed). The number of leaves represent the number of children in marriage.



Yet the visualizations themselves are quite sophisticated, capturing multiple relationships between data points that have a bearing on well-being, for instance marriage, food, and sanitation. This multivariate display reveals interesting higher-order relationships between these dimensions. Redundancy, used to express the same data in multiple ways, was a useful way to communicate information to women with very different educational backgrounds, including those who had no history of education at all. Photographs, cartoon images, colors, numerical scales, were among the representations used. Even for the visualizations that used some text such as the histograms, a viewer who is both illiterate and innumerate can still understand the

information enough to participate in discussions about it.

Very importantly, the visualizations enabled the women to compare indicators from different villages. These “actionable” visualizations suggested practical actions the women could take to improve their well-being. The use of a color spectrum proved indispensable. The women arrived at a color scheme between green (connoting positive qualities) and gray (connoting negative ones).

Once all the visualizations had been gathered, the next step was to place them into a familiar context, in this case situating each of the icons

within a village scene. In the village scene depicted below, the three women gathered around the well represented community participation, the couple talking in front of the house represented decision making within the household, and the couple riding a scooter represented social mobility. The woman figure

holding money represented spending, the banana tree nutrition, and the toilet sanitation. The women focused on villages and on comparisons between villages, and were much less interested in district-level comparisons which they felt would abstract the considerable diversity between different types of villages.

Assert change: Community created visualizations based on assets

The change in assets of families in the village are shown. Green items have been gained in the last five years. Red items have been lost. Unshaded items were in possession both five years ago and now.



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This results series highlights development results, operational innovations and lessons emerging from the South Asia Food and Nutrition Security Initiative (SAFANSI) of the World Bank South Asia region.

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