Restructuring the government’s subsidy program would remove one of the major bottlenecks to expansion allowing the private sector to focus on addressing some of the technical barriers that prevent farmers from adopting drip irrigation.

The Opportunity
Drip irrigation technology saves water, increases farm yields, reduces the cost of pumping, and requires less labor. Current programs to subsidize the cost of drip systems may, paradoxically, hinder wider spread use of the technology. Alternative financing schemes could increase adoption rates and save the State considerable expense.

The Research
This study looked into the reasons for the slow uptake of drip irrigation, a technology which ostensibly has good potential for conserving water, with particular emphasis on the role of subsidies. Researchers identified interventions that could accelerate the pace of adopting drip technology.

The study is based on extensive interviews with manufacturers, retailers and promoters of high-end and low-cost drip technology in two selected regions of Madhya Pradesh. Researchers interviewed officials of the State Horticulture Department responsible for administering the subsidy program, and individual farmers and farmer groups who have adopted the technology. A field survey was conducted in Sagar, Dhar and Indore districts.

Main Findings
There are several technical factors hindering the adoption of drip technology including the quality of drip systems and spare parts, and lack of training in the use and maintenance of the systems. But the key factor dissuading a number of potential drip users from investing is the high capital cost. To address this issue, the Government of Madhya Pradesh offers a generous subsidy, which meets around 70-80% of the cost of a drip system. Manufacturer and market estimates suggest that more than 95% of drip sales in Madhya Pradesh are subsidy linked.

Current Madhya Pradesh subsidy regime
- The total subsidy as a per cent of the cost of equipment varies between 70 and 80 % for different categories of farmers.
- Farmers must pay the unsubsidized portion of the equipment cost (usually as an upfront payment with no financial support).
- Farmers must undertake a long and complex process to receive approval for a subsidy or rely on middlemen, who charge a fee.
- Because the subsidy accounts for 70-80 % of the cost, many farmers will wait for a subsidy rather than invest their own money.
- There is no choice in selection of equipment; farmers have to purchase a kit rather than individual components. This stifles product design and technology innovation.

Based on discussions with stakeholders and prevailing open market prices of components, we envisage that if the subsidies on drip were withdrawn, the prices of manufactured drip systems and components would fall by at least 40 %. Increased competition among manufacturers could further reduce the cost by another 5-10 %, making the adoption of drip technology more attractive to farmers.

Hoses carry water directly to the crop, saving water and maximizing irrigation.
Potential impact

If the current subsidy regime were modified, the capital outlay to bring the same number of farmers and acreage under drip would be substantially reduced for both the government and the farmer. To illustrate the potential impact, we assume a total government subsidy budget of INR 500 million (USD 9.7 million) per year, and show the allocation of the budget under the current subsidy regime (Table 1) and an alternative loan scheme (Table 2) for two farm sizes (0.2 and 5.0 hectares) The three scenarios provided under the loan scheme represent the potential reduction in the market price of drip systems following the withdrawal of the current subsidy regime.

Under the alternative loan scheme, there is no upfront cost for the farmer as in the current subsidy scheme. Moreover, the proposed loan scheme would cover the entire cost of the drip system, whereas the current subsidy regime covers only 70-80% of the cost.

On all parameters the proposed alternative loan scheme to purchase drip kits or components outweighs the existing subsidy scheme. The cost of the loan regime per hectare and per farmer is significantly less than the current subsidy program, resulting in a more efficient use of available government funds and greater incentives for manufacturers to produce and provide support for high quality, low cost drip technologies.

These findings and recommendations are preliminary and are reproduced here for the purposes of discussion. The AgWater Solutions Project welcomes all comments and suggestions. These should be directed to AWMSolutions@cgiar.org, please write “Madhya Pradesh” in the subject line.