II.A.2. Economc Returns and Environmental Implications of Small Water Harvesting Structures: A Case Study of the Farm Ponds Scheme in Gujarat

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Small water harvesting structures were important sources of irrigation before the advent of big dams and canal systems. The recent revival of interest in small water harvesting structures however, is an outcome of the increasing environmental concerns particularly in the context of the severally depleted ground water resources in large parts of the country. Hence small check dams, village tanks and drainage line treatments have started gaining increasing importance. While, the primary objective of such measures is to improve recharging of ground water, they often provide a source of supplementary irrigation thus, substantially benefiting at least a part of the village community. Hence, if properly introduced, these measures can ensure economic viability which in turn, may induce private investments. What is however, missing in these programmes is (a) mechanism of sharing of benefits with those who do not deprive any direct economic gains from such structures; and (b) emphasis on water use efficiency such that it improves the ground water table to a sustainable level. One of the possible ways to overcome this distributional problem is to make smaller structure, like farm ponds, on a large number of privately owned farms. This will spread the benefits among a larger segment of the land owning households, especially those who otherwise, cannot afford investing in private wells and/or remain outside the reach of a small irrigation schemes, like check dams or village ponds, developed on community resources. Moreover, these structures having limited storage capacity and being under the private ownership regime, might promote better efficiency in water use. Also, this may work as an incentive for maintaining these structures and possibly, for better cost recovery. Eventually, farm ponds may prove tobe a technology which is environmentally sustainable, economically viable and socially feasible. Despite these obvious advantages, farm ponds have generally been seen as low priority option by both fanners as well as policy makers. Apriority, this may be due to the factors like (a) low returns vis-a-vis that from canal or lift irrigation schemes; (b) uncertainty about the recharging benefits accruing to the same individual on whose field the structure is made; (c) loss of cultivated land for making the structure; (d) labour intensive operations for maintenance; and (e) lack of information about the potential benefits and the possible adaptations to realise these benefits.

Given these constraints for inducing private investment, the government of Gujarat has initiated a Farm Ponds Scheme mainly as a device for water conservation (rather than for irrigation) in the diy/semi-arid regions in the State. Obviously therefore, the scheme involves high intensity of subsidy i.e of the tune of 85 percent of the total cost, A likely corollary of such a high degree of subsidisation might be low incentives for water-use efficiency as well as maintenance, besides these, it may result into low coverage because of the limited budgetary allocation for the scheme.

The proposed analysis addresses these issues by examining (1) private benefits in terms of net returns; (ii) social benefits in terms of ground water recharge and additional vegetation; (iii) location specific innovations and adaptations for resource use; (iv) quality of maintenance; and (v) scope for cost-recovery. The analysis is based on primary data pertaining to about 500 farm ponds constructed under the scheme in different agro-climatic conditions in the state. The analysis may help identifying an appropriate incentive structure to ensure sustainability - both, economic as well as environmental.