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WATERSHED DEVELOPMENT IN INDIA: ENVIRONMENTAL SERVICES, POVERTY, AND THE LIMITS OF A PROGRAMME

Dr. Saurabh Singhal
Department of Geography, DSM Degree College, affiliated to M.J.P. Ruhelkhand University Bareilly

Abstract

Watershed development, the treatment of small catchments to conserve soil and water, has been among India's largest and most enduring approaches to rural water and land management. This paper assesses the approach and the uncomfortable lessons that its experience has yielded. It argues that watershed development rests on a sound hydrological logic, that treating a catchment to slow runoff, check erosion, and enhance infiltration can augment water availability and regenerate degraded land, but that its benefits and costs fall unevenly, in ways that make it far from the unambiguous good its proponents assume. Drawing on the critical assessment of India's watershed experience, the paper shows that the water a watershed project captures tends to benefit those who own land, especially downslope land where harvested water concentrates, while the landless and the upslope poor may gain little or even lose, as common grazing land is enclosed for treatment. It argues that the environmental services watershed development provides are real but distributed by the existing structure of landholding and power, so that a technically successful project can deepen local inequality. The approach's promise, the paper concludes, depends on confronting its distributive politics rather than treating it as a purely technical exercise.

Keywords: *watershed development; environmental services; poverty; equity; India*

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1. Introduction

For decades, one of India's principal responses to the degradation of its rural land and the scarcity of its rural water has been watershed development: the treatment of small catchments with a combination of measures, contour bunds, check dams, afforestation, and the like, designed to slow the runoff of rainwater, check the erosion of soil, and enhance the recharge of groundwater. Vast sums and great effort have been devoted to it, on the premise that it is a benign and broadly beneficial intervention, good for the land, good for the water, and good for the rural poor. This paper examines that premise and finds it too simple. It argues that watershed

development rests on a sound hydrological logic but distributes its benefits and costs through the existing structure of landholding and power, so that it is far from the unambiguous good its proponents assume.

The paper first sets out the logic of watershed development, then examines the distribution of its benefits, then the distribution of its costs, and finally argues for confronting its distributive politics. The treatment is conceptual and evaluative, drawing on the critical assessment of India's watershed experience.

2. The logic of watershed development

The hydrological logic of watershed development is sound and appealing. In a degraded catchment, rain falls on hardened, denuded slopes and runs off rapidly, carrying soil with it, so that little water infiltrates to recharge the groundwater and much fertile soil is lost. The measures of watershed development aim to reverse this: structures across the slope slow the runoff and give it time to soak in, check dams capture it in small reservoirs and behind them, and vegetation binds the soil and shelters it from the rain. The intended result is more water retained in the catchment, higher groundwater levels, reduced erosion, and the regeneration of degraded land, a bundle of environmental services with evident value in water-scarce, erosion-prone rural India (Kerr, 2002). This logic connects watershed development to the older tradition of local water harvesting, which pursued the same end of capturing water where it falls, and it is the soundness of this logic that has sustained the approach's long popularity (Agarwal & Narain, 1997). As hydrology, watershed development works: a well-treated catchment does retain more water and lose less soil.

3. Who gains: the distribution of benefits

The difficulty lies not in whether watershed development produces benefits but in how those benefits are distributed, and here the critical assessment of India's experience is sobering (Kerr, 2002). The water that a watershed project captures does not benefit all equally. Much of it recharges groundwater, which is accessed through wells, and wells are owned by those with the land and the capital to sink them, so that the augmented groundwater flows disproportionately to the better-off landowners who can pump it. Moreover, the harvested water tends to concentrate downslope, behind check dams and in the lower reaches of the catchment, benefiting those who own land there more than those on the treated slopes above. The result is that the water benefits of watershed development accrue largely to landowners, and among them to those favourably placed, while the landless, who own no land to benefit and no wells to pump, may gain little from the water the project captures (Kerr, 2002). The environmental service is real, but it is captured by the existing structure of landed property, which channels a collective investment into private, and unequal, returns.

4. Who pays: the distribution of costs

If the benefits flow upward, some of the costs flow downward, for watershed development is not costless to the poor. A central difficulty concerns common land. The slopes that most need treatment are often common grazing lands, on which the livestock of the poor and the landless depend, and treating them, by planting, enclosing, or protecting them from grazing, can deprive

the poor of access to a resource on which their meagre livelihoods rest (Kerr, 2002). The enclosure of the commons for watershed treatment thus transfers a cost onto those least able to bear it, even as the benefits accrue to the landed. There is, further, a cost in the distribution of water within the catchment itself, for capturing water upstream for local recharge may reduce the flow to users downstream, redistributing water in ways that create losers as well as winners. The upshot is that watershed development, far from being the unambiguous good its benign hydrology suggests, imposes real costs on the rural poor at the same time as it channels its benefits to the better-off, so that a technically successful project can leave local inequality deeper than it found it (Kerr, 2002).

5. Confronting the distributive politics

The lesson is not that watershed development should be abandoned, for its hydrological benefits are real and valuable, but that it must be understood and conducted as a distributive intervention rather than a purely technical one. Because its benefits and costs fall through the existing structure of landholding and power, a watershed project is unavoidably an act with winners and losers, and treating it as a neutral technical exercise simply allows the existing inequalities to determine the outcome, to the advantage of the landed and the disadvantage of the poor. To realise the promise of the approach without deepening inequality requires confronting its distributive politics directly: designing projects so that the landless and the upslope poor share in the benefits, compensating or providing alternatives for those who lose access to common land, and governing the harvested water through inclusive institutions that give the weak a claim on it rather than leaving it to be captured by those with land and wells (Kerr, 2002; Agarwal & Narain, 1997). This is harder than installing check dams, for it means addressing the politics of land and water rather than only their hydrology, but it is the condition on which watershed development can be a benefit to the rural poor rather than a benefit captured over their heads.

6. Conclusion

Watershed development rests on a sound hydrological logic and produces real environmental services, more water retained, less soil lost, land regenerated, but it distributes those services through the existing structure of landholding and power. Its water benefits flow disproportionately to landowners with wells and favourable position, while its costs, especially the enclosure of common grazing land, fall on the landless and the poor, so that a technically successful project can deepen local inequality. The approach is not therefore to be abandoned but to be understood as the distributive intervention it is, and conducted so as to share its benefits and cushion its costs for those who would otherwise lose. The promise of watershed development depends on confronting its politics, for its hydrology alone, however sound, will not make it just.

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