WET International
Hydro-meteorology for the 21st century

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Some typical water uses

The costs of precipitation enhancement programs are often expressed per acre foot (ac-ft*) of water they produce. These estimates depend on the value of water, which of course varies with local markets and the use to which the water is put. Also, the cost of operational precipitation enhancement programs varies with generator configuration, seeding agents, etc. Because demand for water in the world is increasing, so is its value. Agricultural water in California is valued from $40 to $50 per ac-ft ($175 per ac-ft during drought), while the average value for hydroelectric use (by PG&E) is $100 per ac-ft. Municipal and industrial values are generally higher, from $300-600 per ac-ft.

Based on the above values, we estimate that the current *cost of operational precipitation enhancement programs is between one and twenty dollars per ac-ft* of water produced, giving benefit-to-cost ratios between two to one and ten to one. Compare these figures to other, more infrastructure-intensive alternatives for increasing water supply availability. The cost of groundwater banking projects (operations) is between $150-250 per ac-ft, plus more for building facilities. Desalination is presently about $700 per ac-ft and there is also environmental concern with brine disposal. New dam construction costs average over $2,000 per acre foot, and dams typically take 10 to 20 years to design and build. Furthermore, new dams and reservoirs are frequently opposed by environmental groups. The relatively low cost of precipitation enhancement is a major reason that many water, hydropower and irrigation agencies have used to pursue it. As the demand for and the value of water grows in the world, the benefit-to-cost ratios of precipitation enhancement make it an increasingly attractive option for augmenting water supplies.

* A dollar per acre foot is about 5 € per cubic hectometre, given early 2008 currency exchange rates.

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