

2. Distributional Goals

In an innovative article about law and resource allocation, Calabresi and Melamed note that all societies have wealth distribution preferences such as for more (or less) equality of distribution and for less (or more) willingness to reward producers for their contributions to economic development.¹⁷³ They say preferences may also exist regarding the distribution of specific goods, sometimes called merit goods.¹⁷⁴ An example is the view that everyone should have a certain minimum of education, health care, or police protection regardless of personal wealth. These observations supply a useful framework for discussing distributional goals in pumping level policy.

A major difficulty in attempting to isolate basic distributional policies of the appropriation doctrine should be noted before going further, however. Even after a particular distributional impact of the appropriation doctrine is identified, it may be hard to tell whether that impact reflects fundamental distributional policy or is merely a by-product of rules based upon some other policy such as promoting economic development.

a. Wealth Distribution

Earlier this article alluded to the utilitarian influence in American property law.¹⁷⁵ With its empha-

sis upon maximizing development, the appropriation doctrine seems particularly rooted in economic utilitarianism.¹⁷⁶ The predominant theme of utilitarianism probably is the greatest good for the greatest number, but this does not necessarily lead to any particular view regarding the proper distribution of wealth. Some utilitarians contend that under the economist's principle of decreasing marginal utility of income, equality of distribution is more likely to produce the greatest good for the greatest number.¹⁷⁷ Others favor inequality on the theory that if producers are rewarded to give them an incentive to produce, society as a whole will be better off with the resulting higher level of production despite the inequality of distribution.¹⁷⁸

Equality in American property law has been characterized as being, at best, more of a commitment to a measure of social mobility through competition than a preference for equal distribution of wealth.¹⁷⁹ The priority principle of the appropriation doctrine seems consistent with that. Giving a superior water right to the first in time hardly promotes equality of distribution. The Desert Land Act and other federal land grant statutes, however, have provided a certain equality of opportunity for people to acquire arid western land upon which to put water to beneficial use and acquire wealth.¹⁸⁰

Historically, the reasonable pumping level concept was an alternative to absolute protection of historic means of diversion. Viewed that way, it not only promotes development but distributes wealth to a greater number, i.e., junior as well as senior appropriators. It may even distribute wealth more evenly, i.e., juniors may get more than if they have to pay damages to seniors.

b. Merit Goods

Domestic and other use preferences under the appropriation doctrine seem to be more of a merit good than a wealth distribution preference.¹⁸¹ The implicit policy is that domestic users should be able to get water regardless of limited economic reach.

Pumping level policy can raise other merit good issues in a less direct fashion. The family farm has traditionally been viewed as socially desirable even though larger operations might be more efficient.¹⁸² In a loose sense, the family farm might be viewed as a merit good. There is evidence that because of economies of scale, a large irrigator can afford to pump from a considerably greater depth than a small one.¹⁸³ If pumping levels are geared to what is reasonable for large farms, small ones may be driven out of existence (except those which, fortuitously, can combine to the construct and operate a joint well). If the continued

existence of small family farms is in fact a societal goal, then pumping levels should be coordinated with that it. Much the same issue arises, with potentially greater stakes, when agricultural uses conflict with municipal or industrial uses that can afford to pump water from substantially great depths. Does the agrarian way of life have some special merit entitling it to insulation from the forces of economics?¹⁸⁴

Questions can also arise regarding what might be called "demerit" goods. For example, even among farms of the same size, the kind of crop produced may affect economic pumping levels. Should pumping level regulations be predicated upon, and thus encourage if not require, the production of one crop rather than another? To take a whimsical example, suppose the greatest dollar return from the land in a given area (and, hence, the greatest economically feasible pumping depth) could be attained by producing some unique variety of irrigated opium plant. Surely the American view of opium production as unmeritorious would preclude the setting of pumping levels based on the economic return from opium production. What if the greatest dollar return could be attained by the production of malt barley, however, but the religious beliefs of a significant number of landowners in the area lead them to prefer not to produce a crop used to manufacture an alcoholic beverage?

3. Other Social Goals

Do any noneconomic goals besides distributional preferences affect pumping level policy in appropriation doctrine states? Calabresi and Melamed developed a threefold classification of factors bearing on resource allocation -- economic efficiency, distributional goals, and other justice reasons.¹⁸⁵ They acknowledge difficulty in deciding what to put in the other justice reasons category, given the breadth of the other two. They make the interesting suggestion, however, that this final category may include reasons "which, though possibly originally linked to efficiency, have now a life of their own."¹⁸⁶

Security of investment has been a pervasive theme in the appropriation doctrine. It is a major objective of the principle that first in time is first in right. It is also an objective of the rule that junior appropriators are entitled to the maintenance of stream conditions existing as of the time of their appropriations¹⁸⁷ and the corollary that an appropriator may not change the point of diversion or the place or manner of use of a water right if it will injure any other appropriator, including junior appropriators.¹⁸⁸ Furthermore, while the appropriation doctrine prohibits waste in diverting, transporting and using water, only reasonable efficiency is required; and the courts have been generally reluctant to require methods that are more

efficient than customary in the locality.¹⁸⁹ A commentator has even suggested that the courts give more deference to custom here than in tort law negligence cases, where the prevailing view is that customary safety practices are relevant but far from controlling on the issue of reasonable care.¹⁹⁰ All of this leads to speculation that security of investment, though possibly originally linked to efficiency, has come to have a life of its own under the appropriation doctrine.

French geographer Jean Brunhes' turn of the century study of irrigation in several arid regions of the world led him to theorize that: (1) menacing irregular natural environments create psychological uncertainty varying with the degree and type of physical hazard, (2) generally people seek to free themselves from such psychological uncertainty by associating their common interests under fixed laws, and (3) whether and exactly how they seek to do so, however, is a function of their attitudes toward cooperation and individualism, which in turn depends upon a variety of ethnic, historic, legal and political influences.¹⁹¹ If Brunhes is correct, it would hardly be surprising for the new western water law doctrine of prior appropriation to develop a fixation upon security of investment to cope with the uncertainties of water supply and for that fixation to come to have a life of its own.

The presently important question is how much importance security of investment should continue to have as the twentieth century draws to a close. In many areas, overdevelopment is a greater problem than encouraging more development. Also, today's irrigators face considerable uncertainty about various factors of production, such as fertilizer and energy costs. Why should physical pumping level be the subject of special stabilizing regulation when the other uncertainties are not? Is it only because the government can more readily stabilize pumping level by legal command than it can fertilizer and energy costs?

Security of investment in ground water management can be discussed in cost-benefit terms, even though it has been treated so far under the category of other justice reasons rather than economic efficiency.¹⁹² A decision to lower pumping levels will have a "cost" to existing appropriators in the form of reduced security of investment.¹⁹³ Whether this kind of cost should be taken into account in cost-benefit analysis, however, depends upon how legitimate a value security of investment is. As economist E. J. Mishan pointed out: "The question of which effects are to count and which not, must, in the last resort, depend upon a consensus in the particular society."¹⁹⁴ Much of the difficulty in giving specific content to the reasonable pumping level concept seems to stem from the lack of a modern con-

sensus about the legitimacy of security of investment as a value for its own sake.

IV. ALTERNATIVES

The two extreme approaches to the pumping level issue are: (1) well owners have no protection whatsoever in their diversion systems and each must pay his own costs of coping with declining water levels, and (2) existing appropriators are absolutely protected in their historic diversion systems and have injunctive or damage remedies against interference by junior users. Whatever the merits of these extreme views,¹⁹⁵ neither has much support in the West today. The appropriation doctrine states have overwhelmingly opted for a middle ground stated in terms of the reasonable pumping level standard. Some other middle ground approaches are examined below.

A. Proportionality

The proportionality alternative has been explained as follows:

Well owners A, B, and C have been pumping 10, 20, and 30 units respectively for a total of 60 from a basin with an annual recharge of 60. The water level is not declining. Now D drills a new well and pumps 40 units and the water table drops, causing the pumping costs of the three senior appropriators to increase by 10 -- A's by 2, B's by 4 since he had to deepen the well in addition to pumping from a lower depth, and C's by 4. Since the

seniors' continued pumping is as responsible for the decline as D's pumping is, they should each contribute their proportionate share of the externality.¹⁹⁶

The "externality" to be shared might be computed in different ways,¹⁹⁷ but in simple form would be the total increase in pumping costs to all well owners from mining the basin by 40 units after D begins pumping. The rationale advanced for sharing such costs is that continued pumping by the three seniors is just as responsible as D's pumping for the overdraft. In short, the justification for apportionment of overdraft costs is physical causation.

There are several difficulties with this approach. First, the administrative or legal costs of ascertaining the proportionate share of each well might not be worth the trouble. Especially is this true in case of widespread overdraft involving numerous wells.¹⁹⁸ Second, legal liability is generally predicated on more than mere physical causation alone. It tends to be fixed at least in part on the basis of moral and other policy considerations.¹⁹⁹ Third, most states already have some pumping level law, and shifting to a proportionality rule would raise a number of questions. In an appropriation doctrine state with the reasonable pumping level approach, why should the gainers from the shift gain at the expense of the losers? The logic of physical cause in fact seems a feeble answer. Also, how would the proportionality rule affect the appropria-

tion doctrine tradition of economic development? Would it produce overdevelopment because D (in the illustration above) is not required to pay the total marginal cost of his pumping the extra 40 units, including increased pumping costs to the three senior well owners? Or, would it lead to underdevelopment because the risk of future higher pumping costs if new wells are opened will deter investment in pumping plants?²⁰⁰ In addition, would a mechanical proportionality rule be consistent with distributional goals such as use preferences and family farms. Finally, if security of investment has come to have a life of its own, the uncertainty of the proportionality rule associated with the risk of future new wells is a drawback.

B. Restatement (Second) of Torts § 858

The Second Restatement of Torts would allow a land proprietor or his grantee to withdraw water from beneath the land and use it for a beneficial purpose without liability for interfering with use by others unless, inter alia, "the withdrawal of ground water unreasonably causes harm to a proprietor of neighboring land through lowering the water table or reducing artesian pressure," ²⁰¹ The comment on this provision would impose liability for well interference if one person drills a large well too close to another's well. "There is usually water for both if

the proper distance is kept between them, and since in this case the person causing the harm could have easily avoided it, the harm he causes to the owner of the first well is unreasonable."²⁰²

This example illustrates a difference between focusing upon the unreasonable causing of harm, as the Restatement does, and some of the reasonable pumping level statutes. For example, Alaska has no well spacing legislation, and its pumping level statute says that priority of appropriation does not give a right to prevent the lowering of a water table or artesian pressure "if the prior appropriator can reasonably obtain his water under the changed conditions."²⁰³ If the new water level is still within the economic reach of the senior appropriator, apparently the statute denies him relief against a junior whose well is too close. The same may be true of statutes like those in Colorado and Idaho,²⁰⁴ which guarantee only the maintenance of reasonable pumping levels. To authorize relief such language would have to be stretched to allow inquiry not only into what the pumping level is but how it got there.

Based on experience in Arizona under the reasonable use doctrine, a critic of the Restatement has argued that its approach "in practice encourages increased pumping and excessive withdrawals at least until a complaint is made alleging unreasonable

uses."²⁰⁵ The same could probably be said of the reasonable pumping level statutes unless administering state agencies issue pumping level regulations before withdrawals become excessive.

C. Pump Tax

A pump tax has been suggested as a means to achieve economic efficiency in ground water management.²⁰⁶ Under a full-scale taxing approach, the amount of the tax would be based on the estimated value of the water if withdrawn in the future discounted to present value. Those present pumpers whose uses produce revenues less than the pump tax and their other costs would then cease pumping, thus saving the resource for future, more valuable uses.²⁰⁷ The National Water Commission has suggested that if full-scale pricing is too great a departure from orthodoxy, a more modest pump tax could at least move ground water use in the general direction of economic efficiency. For example, says the Commission, a decision could arbitrarily be made to manage a nonrechargeable aquifer for a life of 40 years. After determining how much water can be withdrawn annually, a pump charge could be set in an amount that would encourage pumping only of the water scheduled for availability in a particular year, no more and no less. The necessary level of pump tax would be determined through trial and error.²⁰⁸

The pump tax approach has been criticized for practical difficulties in political acceptance.²⁰⁹ These difficulties may well be insurmountable in states with an appropriation doctrine tradition. Certainly, the pump tax could have wealth distribution effects vastly different from the priority principle of the appropriation doctrine. Beyond that, the pump tax does not resolve the hard policy questions in pumping level management. It is more a tool to implement policy than to decide what the policy should be. If it were agreed that maintaining a certain pumping level or rate of controlled pumping level decline is desirable, that policy decision could be implemented in any of several ways, i.e., by regulation (such as first in time is first in right), by a pump tax, or even by a subsidy in which the government pays people not to pump.²¹⁰ The pump tax concept itself fails even to reach the hard and fundamental problem of balancing possibly competing economic efficiency and social goals to determine desirable pumping levels in specific cases.

V. CONCLUSIONS

This article opened with the statement from a National Water Commission study that: "No definitive guidelines exist as to what the measure of reasonableness is or how it will be applied."²¹¹ Although the

reasonable pumping level statutes incompletely enumerate factors that should bear on the measure of reasonableness, the root cause of the uncertainty lies deeper. Additional factors can be ascertained from study of appropriation doctrine laws and traditions. Definitive guidelines in the sense of rules or some methodology that will yield mechanical answers, however, are impossible or at least unwise. Unless one is willing to accept a simplistic approach like the proportionality rule, the need is inevitable to weigh potentially competing concerns about economic efficiency, wealth and merit good distribution, and (perhaps) security of investment as a goal in itself.

The task then is to develop procedures to achieve knowledgeable and responsible weighing of such concerns. The essence of the problem is captured by the following commentary upon water management under the Alaska water code. That code allows new appropriations only for uses that will be in the public interest, and it enumerates a number of factors bearing on the public interest.²¹² Despite the enumeration, Dean Frank Trelease, the code's principal draftsman, has commented:

Making decisions such as these will be very difficult. No law can make them. They must be made by people. No economic formula can solve these problems by push button techniques. . . . It is believed that the real strength of the Code lies in its procedures, which will enable all viewpoints to be brought together and all factors considered, so that choices will be made, not by action

of an appropriator or polluter, and not to further the policy of a single-purpose agency, but on an informed basis by officials responsible to the State for "maximum use consistent with the public interest", for the "maximum benefit of (all) its people."²¹³

Similarly, there would seem to be no stronger approach to the pumping level problem than using procedures designed to enable all viewpoints to be brought together and all factors considered, with choices made on an informed basis by officials responsible to the state for the maximum benefit of all its people.²¹⁴

Because of the case-by-case nature of private litigation and fortuity in which cases are brought to court and how well they are presented, a comprehensive, informed, and forward looking approach to pumping regulation must come from administrative agencies.²¹⁵

A number of western water or ground water codes give state agencies broad power to issue regulations implementing state water laws.²¹⁶ Generally such statutes could be interpreted to authorize the issuance of reasonable pumping level regulations. In some states, statutes specifically empower agencies to issue reasonable pumping level regulations or orders²¹⁷ or otherwise clearly contemplate administrative action regarding pumping levels.²¹⁸ The water agencies in most western states have not been quick to issue pumping level regulations, however.

Agency inaction is understandable. There is no shortage of other pressing business. Adequate physical and economic data is not always available. Perhaps most importantly, ultimate justification of pumping level decisions depends greatly upon a consensus among the people affected regarding appropriate factors and their relative weights.²¹⁹ The existing pumping level statutes are broad enough to accommodate almost any consensus that might emerge; but without a consensus, an agency has difficulty defending its pumping level decisions.

The one consensus that must be avoided is that pumping levels have dropped too far, perhaps irreversibly, and something should have been done long ago. Generally this point has not been reached in appropriation doctrine states with reasonable pumping level statutes. There is still time to develop preventive regulations. The dilemma is that: (1) answers to what pumping levels are reasonable depend so much upon public consensus, (2) no public consensus has yet emerged, but (3) specific answers cannot forever be left to the future.

If agencies are disinclined to act in the absence of public consensus, the solution is to promote knowledgeable public consensus.²²⁰ Public involvement procedures used recently by the Idaho Water Resource Board to develop a state water plan illustrate a promis-

ing approach.²²¹ Before the plan was drafted, the board held numerous public information meetings and prepared newspaper supplements that identified major water problems in different basins, presented alternative planning concepts, and solicited responses. After the plan was drafted but before it was adopted, public hearings were held in various locations.²²² All this costs time and money, but with pumping level regulations it could be limited to specific geographical areas. A skillful agency can use public participation not only to gather information but to disseminate data that can help to crystallize public consensus.