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# THE ECONOMICS OF WATER SUPPLY AND CONTROL

## EDITORIAL

IT is common knowledge that growing crops need space, light, air, food, warmth, and moisture, and they need them in certain amounts. A shortage of any one of them, and an excess of some, have an adverse effect on yields. In many parts of the world it is the amount of moisture which is critical. In extreme cases no growth at all is possible without artificial supplies of water, and wherever it is scarce an increased supply has an immediate and telling effect on production. At the other end of the scale there are places and times when water is so abundant as to make growth difficult or impossible. It is not surprising that cultivators ever since crop husbandry began have sought by irrigation and drainage to regulate the supply of water to their plants.

Recent prodigious advances in civil engineering and power generation have opened up new opportunities for controlling water supplies. Many cultivated areas today where natural precipitation is inadequate or over-abundant, or where the natural water table is too high, have in operation impressive water conservation, supply and drainage systems which are monuments of engineering skill. The benefits thus provided are obtained only at a cost, however; and the costs of the largest works are staggering in terms of capital investment and labour. Furthermore, it often happens that areas in which such works appear technically desirable are those where standards of living are low, and where there are many competing demands for such little capital as there may be. But this shortage of income and capital is sometimes itself a result of a shortage of water. In some cases the provision of irrigation can so increase production as eventually not only to meet the cost of the works but also to facilitate a progressively rising standard of living. In order to do this, however, capital has often to be provided for a fairly long term from foreign sources.

Clearly, to put this on a rational basis, methods must be devised for estimating the costs and returns to be expected from water supply and control works, and also from possible alternative uses of capital. The following articles give examples of how this has been attempted in various countries, together with comparisons in economic terms of

alternative methods, such as large-scale and small-scale works serving roughly the same purpose.

Contributions have been invited from all countries where members of the International Conference of Agricultural Economists are to be found, and this issue of the *Journal* contains a selection of the earlier responses to the invitation. At the end of the series, which it is hoped will cover a large part of the world, it is intended to make a brief analysis bringing together so far as possible the conclusions reached.