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The water paradox: scarce & valuable but inefficient use & poor political decisions - who should we blame?

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SUMMARY - Water is now scarce and valuable but those who command the bulk of its use still waste too much of it and those politicians who could reallocate it to higher value uses are poorly briefed by their technical advisers. It is argued that economics has an important but strictly limited role to play in setting options for choice. All civil society, and perhaps especially the professional societies and universities, have a crucial role to play in creating and assessing alternatives and in guiding political choice.

Keywords: Water allocation, government role, technical advice.

RESUME - En tant que ressource, l'eau devient rare et acquiert de la valeur. Pourtant, ceux qui contrôlent la majeure partie de son utilisation gaspillent encore de trop. Les responsables politiques qui pourraient réallouer cette ressource à des utilisations plus intéressantes ne bénéficient pas assez de l'apport solide d'experts techniques. Cet article expose comment les outils économiques peuvent jouer un rôle important mais strictement limité dans la mise en place d'options de choix. Toute société civile, et peut-être surtout les sociétés professionnelles et les universités, ont un rôle crucial à jouer pour créer et évaluer les alternatives et pour guider les choix politiques.

Mots-clés: Allocation de l'eau, rôle du gouvernement, conseil technique.

OPTIONS FOR CHOICE

There is no fresh water left in the Mediterranean region that is not valued and/or used by someone. An individual, group or other interests now have a legal or assumed right to consume or use all the fresh water. Indeed, there are now conflicting and growing demands for water which are impossible to reconcile and which will require political resolution. Some

of these problems are quite local, some are regional or national and some are international in nature.¹

A precondition for wise and fair assessment and decisions about the trade-offs between the separate and often legitimate water demands is a strong government with a clear policy and the ability to con-

vince the consumers, wherever they might be located, to abide by that policy. This paper makes the case that it is the role of professionals, such as those represented here to present clear technical options to the politicians, to make transparent, in as non-technical way as is possible, the opportunity costs of choosing option 'a' rather than the alternative 'b', and to expose the criteria by which they formed their judgements.²

CRITERIA FOR CHOICE

These criteria have to be as general as is possible and multidisciplinary in nature. The days are long gone when water development was the sole province of the engineer with perhaps the financial analyst or the economist hovering in the background making critical and often unhelpful comments to the effect that the internal rate of return is too low.

Today with scarce resources and with great competition for them many other specialists need to be invited to the 'water party' including agriculturists, regional geographers, social development analysts, public health professionals, accountants and lawyers. Their preoccupations will go beyond water into cross-cutting issues such as poverty, employment, gender aspects, environment and sustainable development.

In principle each specialist, in making professional judgements, should take account of the outcome of the analysis of all the other specialists but there is clearly a sequencing problem and there are practical difficulties. Nevertheless there are good grounds for calling for much more genuine multidisciplinary activity and a more iterative process with tentative interim conclusions considered by all and with the final plans for allocating water directed to providing politicians with options.

Economics has key a role to play in the engineering, the agriculture and other institutional areas of water management. There are powerful theories, concepts and analytical approaches that can help delineate the options. There some powerful key concepts such as opportunity cost but nevertheless too much should not be claimed for its contribution. A politician can reasonably overrule economic advice but it is most important that he or she does so in the light of the opportunity costs that will be incurred.

SCARCE AND VALUABLE

'Water, water everywhere' cried Coleridge's ancient mariner. Today water the situation is different as it is scarce and yet the cry is for more and more water. Urban and industrial lobbies want to be able to turn on a tap at any time of the day or night and have as much water as they need, often at a low or even a zero service cost. Electricity consumers want the hydro-electric capacity to be able to produce electric power to order, so that electricity is available 24 hours a day and ready to meet any peak. But those dwelling in the flood plains want the dams left empty to absorb floods. Envious eyes are cast towards agriculture because the vast bulk of the water is already consumed by that sub-sector and it is often obvious that it is inefficiently managed at present.

In attempting to improve the efficiency of irrigation which is essential if farmers are to justify holding onto their historical share it is clear that agriculture faces severe technical problems. For example, the small amounts of salt always present in irrigation water are generally not being exported from the irrigation areas but are slowly building up in the soil profile to toxic levels. Poor maintenance of delivery facilities creates unnecessary water losses. Seawater is creeping up estuaries and into fresh groundwater aquifers as they are poorly managed and overpumped.

The diminished river flows are often and increasingly being polluted because they are unable to cope with an increased load of urban and agricultural waste. In other areas some of the best irrigable land is being permanently lost as urban areas are encroaching. Technical solutions to these problems are well known but it would appear that the problems are not yet perceived to be a priority, or that the political will is not there for reform or that the management capacity to resolve them is defective.

REALLOCATING AGRICULTURE'S WATER

Taking water away from agriculture to solve growing water demands elsewhere may lead to a solution of the problem of a growing urban scarcity but it will create or exacerbate other serious problems. More than half of the population of the countries bordering the southern parts of the Mediterranean are under twenty years of age. Even if there is massive economic growth and/or a move to the re-

gion from the northern countries of manufacturing and service industries it is clear that employment creation is inevitably still going to be social and political priority for government.

Government responsibility may lie primarily in fostering the general economic climate but increasingly they must turn their attention to the creation of sustainable jobs. Only in agriculture is the ratio of jobs created to capital invested favourable enough to offer the prospect of large scale employment creation. Each job created in a new modern industrial enterprise may require a million dollars or more of investment. In the case of irrigated agriculture a high technology scheme could be built for perhaps a twentieth of the cost per job created and a rehabilitation project for even less. Furthermore, the families of irrigation farmers would not live in the already overcrowded and polluted urban centres. However, if irrigation is to fulfil its potential in this regard then the technical and economic performance of schemes has to much more closely match the promise.

Agricultural prospects are generally limited by market conditions and the availability of productive resources and management skills. Water is often the most scarce resource restricting agricultural expansion with many conflicting demands for its use. Rational allocation or reallocation of water to its most productive use is constrained by history, culture and politics.

Historically water availability determined where people settled, the form of their economic activity and how society flourished. Until the 1950's population was growing slowly, if at all, and there were modest competing demands for water from urban areas. In consequence there was relatively little conflict over water supply.

Today all this has changed because agriculture's water demands increase as it seeks to expand the area cultivated to take advantage of recent advances in production technology and ready access to distant but profitable markets. But the urban population is rising rapidly and per capita urban water demands are increasing as industry expands and personal incomes rise and needs become more varied.

New priority uses are also being recognised such as environmental demands in rivers, lakes and estuaries. As volumes of available surface and groundwa-

ter decline and as the pollution loads rise so new threats are emerging. Water is increasingly the focus of open and covert confrontation and strife.

GOVERNMENT AND MARKETS

The current dominant ideology guiding public and private political action to promote economic use of water is the power and efficiency of the market. Market processes are contrasted with the demonstrable weakness of governments in allocating scarce resources cheaply and effectively.

To date the best that can be said for the market in relation to water allocation is what Scottish law terms 'not proven'. There is not much experience of full use of market forces to allocate scarce water but there is much faith that it will work. Throughout the world irrigation and often drinking water is still subsidised by governments in a way or to an extent that fertiliser, electricity and other inputs are not. We do know, for example, that where the market in urban drinking water operates, in the absence of large scale public schemes, the poor pay vendors up to 100 times the network price per litre. We know that where there is no effective public regulation of private fresh groundwater abstraction then over-development and excessive pumping is common which increases the pumping costs to everyone and which in time can irreversibly damage the resource.

We can also be sure that attempts to bring more market discipline into the water business will be fraught with difficulty. For example it is extremely difficult to measure water delivery in the field accurately and reliably. The rural equivalent for water of the electricity meter has yet to be developed. Water meters for low discharge urban drinking water are available but they are expensive to install and maintain. What is needed is a meter that is cheap and reliable, that will stand up to silty water and to other harsh conditions in the field, that will resist farmer interference but will monitor the relatively high discharges that farmers receive. Many attempts to meter farm water supply have been abandoned.

Overall it is hard to escape the conclusion that the main enthusiasm for markets lies in the failure of the interventionist bureaucratic allocation systems rather than in any great faith in the market mecha-

nism. Many of the bureaucrats would perhaps reasonably claim that they have failed to plan and manage water systems effectively (in their strategic planning, project planning, monitoring and evaluation phases, and in the processes of budget allocations, coordination and regulation) largely because of weak political support for their proposals and actions. Many politicians would claim that they have been poorly briefed by their officials.

Both bureaucratic and political claims have some merit. We discussed above that in recent years we have moved rather rapidly from regarding water development as an engineering preoccupation to an acceptance that it has elements of agriculture, economics, finance, and that even farmers have a legitimate interest. What we do not seem to have fully absorbed in our formal professional deliberations is an acceptance that the political dimension is dominant and that we have a professional responsibility to give clear alternative visions or choices to the political authorities. We need to learn to respect the integrity of political processes and play our part in improving them. For their part once politicians have made a choice - for example to increase user service fees as a condition of an international loan, they have a duty to support the implementation of that decision despite the evident problems it will create.

GOVERNMENT, OFFICIALS, UNIVERSITIES AND OTHER INSTITUTIONS

In setting out future pathways for the management of water there can be argument and perhaps equally valid but differing views of the role of institutions. Weak government, such as that which we currently see in many countries, cannot be seen as a triumph even by the political right who distrust government. Even the guru of the market advocates, Adam Smith, recognised 200 years ago that defence, administration of justice and certain public works were the government's responsibility and a weak government would fail in these tasks.

Today many economists would add to government's basic role coping with collective goods (eg flood control, police and fire services) where the market would fail to provide to the socially optimum level; making adjustments where there is a divergence between private and social costs and benefits (eg where there are external costs and benefits as when

a sugar mill discharges pollution into a river or fumes into the air, when downstream hydro schemes benefit from river regulation of upstream dams); coping with extraordinary risks which are too large for the private sector without government support; regulating natural monopolies (drinking water and irrigation); and finally government has to act on behalf of the poorest groups who lack both assets and income and provide safety nets against abject poverty, if necessary by redistributing income and wealth.

We have argued that governments could be better briefed by their officials but they also need constructive criticism to sharpen their ability to choose. Universities have a special role to play with in-depth research and analysis, creating and evaluating in an independent fashion the widest range of options and exploring the longer run scenarios. Civil society - all those organisations and institutions in the contemporary social order which associate as interest groups, a free press and other media, professional societies and suchlike, which seek to influence government without necessarily seeking public office, also have a legitimate interest in water matters and can help to create the climate for debate and scrutiny of options for water development. It seems most likely that environmental groups will have most influence on water development and their (generally negative) views will probably have a profound impact upon the form and extent of water development.

CONCLUSION

Margaret Thatcher was wrong and perhaps badly briefed when she told the British nation in a now famous phrase 'there is no alternative [..to her view]'. There are always alternatives and good decision makers will closely examine them. Whilst history, culture and economics all lead us to the conclusion that water development and its management is in the final analysis primarily a political matter, we would do well do recognise more readily the importance of our technical roles in creating alternative visions for the political decision makers.

Technical specialists, such as the bulk of the delegates to this symposium, should, I have argued, engage in more dialogue with politicians in detailing the trade-offs, constraints and opportunities to alternative actions for allocating and managing what is an increasingly scarce and valuable water re-

source. Perhaps our next symposium should deal explicitly with the political economy of water and include among the participants political representatives, including political representatives of the farming community, alongside the technical ex-

perts. And if the politicians will not come to us of their own volition then perhaps we should actively invite them to join our next deliberation on modern management of scarce, valuable water resources.

- ¹. For example, it is clear that the volume of water in the Nile Basin is not sufficient to meet reliably the current levels of water demand, quite apart from rapidly growing needs. The issues involved in the complex matter of evaluating and managing the international water resources of the Nile, including the environmental dimension are examined in J A Allan and P P Howell (eds), (1995) *The Nile: Sharing a Scarce Resource*, Cambridge University Press, Cambridge.
- ². The situation was similar throughout much of sub-Saharan Africa 'The senior echelons of the bureaucracy, with few exceptions, have played a weak role, lacking adequate dialogue with the political leaders, lacking independence and providing limited technical analysis of policy options' John Healey and Mark Robinson (1992) *Democracy, Governance and Economic Policy* ODI, London