Water: Charting a Course for the Future – II

Water has suddenly become a favoured subject for seminars and conferences all over the world. A common trend in most of the discussions is to proceed from projections of demand to supply-side solutions in the form of ‘water resource development’ projects; estimate the massive investment funds needed; take note of the severe limitations on the availability of financial resources with governments; point to private sector investment as the answer; and stress the need for policy change to facilitate this. In India, consciousness of the importance of the subject led to the appointment of the first National Commission on water, which submitted its report in September 1999. This paper attempts to provide a broad and compendious account of the state of affairs in India as far as water resources are concerned and to chart a course for the future.

[The paper has been published in two parts, this being the second part. The first part appeared last week.]

V

What Needs to be Done?

(A) Reorientations

How are those objectives to be achieved? Many things need to be done, but they cannot be done without a major reorientation of attitudes and approaches. The needed change is set forth in the form of catchphrases in a summary tabular statement (Table 2). These cryptic phrases are elaborated in the ensuing paragraphs.

In the conventional line of thinking the focus is on ‘WRD’, i.e., ‘water resource development’ which is understood to mean big storage and/or transfer projects. There are some unexamed ideas (partly un-stated, partly explicit) underlying this argument for WRD. Firstly, ‘demand’ projections are generally based (a) on current patterns of water-use with some adjustments for improvements in efficiency and resource-conservation, and (b) on prevailing notions of ‘development’. If we assume (‘realistically’) that no more than moderate improvements in efficiency and economy in water-use are likely to happen, and if we assume further (even more ‘realistically’) that there will be no change in our ideas of ‘development’ (i.e., the pursuit of higher and higher ‘standards of living’, with all countries aspiring to the condition of America), then there will indeed be a horrendous water scarcity necessitating massive supply-side projects. We must then also ‘realistically’ acknowledge that sustainable development is an impossibility, and that planet earth (and along with it humanity) is doomed. Instead of such apocalyptic forecasts, it will surely be more realistic to recognise that given the precious nature of this life-sustaining element and its finite supply on this planet, a tremendous effort needs to be made at efficiency, economy and conservation, so that the benefit derived from a unit of water is maximised.

The approach common in the case of other consumer or industrial goods, of projecting demand and providing the supply through production, is inappropriate in the case of water. Here we need to start from the recognition of finite availability and learn to live with it. (In the course of the India-Bangladesh talks on the sharing of river waters, it has often been argued that the waters of the mighty rivers Ganga and Brahmaputra are inadequate for the needs of the two countries.) This would sound very strange to people in other parts of the world who have learnt to live and live well with a far less generous natural endowment. (Israel is an excellent example). With the kind of reversal of approach indicated above (which implies changes in ways of living) the ‘demand’ projections will undergo drastic reductions. (The reference here is to water for irrigation, industry, etc, and not to water for drinking, cooking and washing, though even here there is much scope for economy in the case of the middle and rich classes.)

Secondly, we must shake ourselves free of the usual engineering conventions of defining ‘available water resources’ in terms of ‘run-off’, and ‘usable water resources’ in terms of what is stored behind a dam. What is available in nature is rainfall, not just run-off; and while storing river waters behind a dam doubtless converts ‘available’ water into ‘usable’ water, so does storage development. These are also part of the supply-side answers to the demand.

If we combine those two propositions, namely, if we learn to reduce our draft on this finite and precious resource, and if we...
learn to augment supplies locally through watershed development and water-harvesting in every locality and area where this is feasible, then we may find that the available water will go a long way indeed, and that a crisis can be averted with very little (if any) recourse to big WRD projects and huge investments.

Further, underlying large WRD projects is the philosophy (still prevalent, though no longer stridently voiced) of ‘conquest of nature’. This is the legacy of the western legend of Prometheus who is said to have brought fire to earth in defiance of the gods. Under the influence of that legacy, we are driven by technological hubris to undertake the ‘harnessing’ of nature for ‘development’. In contrast, we have the Indian legend of Bhagiratha who brought water – the river Ganga – to earth in a prayerful spirit. If we forget for a moment the questionable calculus of supply and demand and look at ‘water security’ (to use an expression which has come into vogue) from the point of view of protecting the ecological system and planet earth, we get a different perspective altogether: we begin to realise that by building a series of large WRD projects we shall not be ensuring security but endangering it.

Fortunately, to future demands for water (based on visions neither of excessive affluence nor of Gandhian austerity, but of modest prosperity), the answer does not necessarily lie in large, centralised, ‘top-down’, technology-driven projects: local, decentralised, community-based, people-centred alternatives are available. Achievements such as those of Anna Hazare (Ralegan Siddhi village in Maharashtra), P R Mishra (Sukhomajri in Haryana), Rajendra Singh and the NGO Tarun Bharat Sangh (several hundred villages in Rajasthan), and similar efforts in Madhya Pradesh under the leadership of chief minister Digvijay Singh, have become well known. What needs to be understood is that these are not ‘small’ instances but significant developments in terms of increased water availability, rise in groundwater table, and extension of irrigation. If these examples could be replicated in thousands across the subcontinent (wherever feasible), they could be major components in water planning.

(The Indian country report to the WCD points out that out of the increase in the production of foodgrains from 51 million tonnes in 1950-51 to almost 200 million tonnes by 1996-97, 66.7 per cent came from irrigated areas, which represented one-third of the total cultivated area, and that out of this only 36.8 per cent came from the major/medium category. Thus, a significant part of our food production comes from areas irrigated by sources other than large projects. A nationwide spread of community initiatives in water-harvesting and watershed development can therefore make a substantial contribution to agricultural production in the country.)

What further needs to be understood is that these are instances not merely of water management, but of social mobilisation and transformation. (Some activities assisted by multilateral or bilateral donor agencies, such as the Sodic Lands Reclamation and Swajal Projects in UP, have also achieved significant successes.) Being community initiatives, they are generally more harmonious and equitable than large, centralised, top-down systems. Conflicts may arise even in such local efforts, but they are likely to be resolved locally within the community. For instance, the people involved in using the waters of the Arvari (a small river in Rajasthan) have established the ‘Arvari Parliament’ for decision-making on matters of common interest and for resolving conflicts. It is in this kind of local, civil-society initiatives, and not in grandiose visions of WRD or long-distance transfers, that the answer to future needs lies. We must learn to shake off the spell of gigantism. Instead of thinking of water harvesting and watershed development as small, secondary and supplementary to large projects, we must reverse the order and regard the former as central and the latter as supplementary. Large projects should be not the first or the preferred route but the last option. The possibility of integrating a large project with smaller surface and underground storages within the sub-basin or watershed must also be considered.

As for water-scarce areas, let us not be hypnotised by visions of long-distance water transfers, whether inter-basin or intra-basin. We need to look at the various drought-prone and arid areas of the country severally and in each case explore local possibilities of water-harvesting and conservation, keeping in mind what has been achieved in some places (e.g., Alwar), and thinking of recourse to external water only as a last resort. The same approach applies to urban centres. They need not be helplessly dependent on water from distant sources. Realising that the prospects of water from distant projects are remote and uncertain, Delhi is now seriously exploring the possibilities of local augmentation through increased storage in existing channels such as the Najafgarh Nalla, re-activation of old and disused water-bodies such as the one at Hauz Khas, roof-top collection of rain-water, and other similar means. Chennai is also trying to promote rooftop collection. This approach needs to be assiduously pursued. Similarly, traditional methods of water-harvesting and management, widely prevalent in diverse forms in different parts of the country, need to be revived and re-energised, and the almost forgotten role of the community in these matters restored. All this needs to be taken up as a national campaign. (At the time of writing, a very useful Occasional Paper of the Centre for Science and Environment entitled Drought? Try Capturing the Rain by Anil Agarwal has come to hand. Meant as a Briefing Paper for Members of Parliament and of State Legislatures, it argues the case for water-harvesting and watershed development as the true answer to droughts very persuasively.)

In the case of electric power also, all options including demand management, energy-saving, increasing output from capacities already installed, minimising energy inputs through technological improvements and innovations, extensive decentralised generation through biomass (integrating agriculture), wind/solar/tidal energy, etc, need to be explored, minimising the need for large centralised generation. The approaches advocated by A K N Reddy, Girish Sant and KR Dayte (see references) deserve more careful consideration than they have so far received.

**Basin and Watershed**

How is the recommended focus on local water-harvesting and watershed development to be reconciled with the generally accepted idea of ‘basin planning’? There is no contradiction here, but this needs a bit of explanation.

The term ‘basin planning’ derives from hydrology and is essentially an engineer’s language. How did this idea originate? It arose from a recognition of the limitations and dangers of isolated project planning. Engineers built a dam here, a barrage there, a run-of-the-river scheme in a third place, flood-control embankments in a fourth, and so on. By experience they learnt that this was not the best thing to do, and that in planning any such intervention in a river they needed to take into account the river as a whole. That logic cannot be faulted.
Clearly, discrete project planning is inferior to project-planning within a larger framework. However, this is still a very limited vision for two reasons.

The first is that while widening our vision from a point on the river to the river as a whole we are still thinking only of the river, and not of the ecological system of which it is a part – by which it is sustained and which it in turn sustains. A basin is primarily a hydrological concept, not an ecological one. In fact, even from a hydrological point of view, a river-basin approach suffers from the limitation that the boundaries of the basin may not coincide with those of groundwater aquifers. In theory everyone recognises that water in all its forms – rivers, lakes and other surface-water bodies, wetlands, groundwater aquifers, atmospheric moisture, precipitation in the form of rain or snow, glaciers, and so on – constitutes a unity; in practice, however, basin planning is often focused only on the river, ignoring or taking only perfunctory note of other forms of water.

Secondly, we are thinking of the river in terms of ‘planning’; and if we ask ‘What are we planning?’ the answer is clear: ‘projects’. As the discrete and fragmented planning of projects is unsatisfactory we wish to plan in a larger context, but we are still thinking in terms of projects. We want to ‘harness’ the water resources of a river for human use through the application of science and technology (‘s and t’), and it is in that context that the idea of basin planning emerges: the engineer wants to build better and larger projects. When he thinks of the basin as a whole, he thinks in terms of what from an engineering or economic point of view might seem ‘optimal’ locations for various purposes. This is essentially a centralising tendency and it is usually the precursor to the formulation of big projects.

Thus, the idea of ‘basin planning and management’, which prima facie, seems eminently sound, contains within itself the seeds of centralisation and gigantism. We need to be aware of and on our guard against such tendencies. If by ‘sustainability’ we mean the long-term maintenance of an ecological balance and thus the survival of planet earth and with it humanity; if we approach this in a positive spirit of fostering a harmonious relationship with nature rather than merely limiting the harm that we do; if we think of rivers not as separate entities but as integral parts of larger ecological systems; then our planning might take different forms from the conventional. On the one hand we might look at a larger framework than a river basin, and on the other, we might focus on smaller land-and-water complexes such as micro-watersheds as well as the enormous possibilities of local rainwater-harvesting. We would also learn to think not merely of human need but also of the needs of other species and forms of life – birds, animals, aquatic life, vegetation, indeed the river itself. We could still plan ‘projects’ but with reference to a much wider and more complex framework; there could still be room and need for basin commissions or authorities but they will cooperate and live with the river, not ‘manage’ or ‘harness’ it.

Subject to that caution, it is certainly necessary to take a comprehensive view of a river system as a whole. The initiatives that are taken at the micro-watershed level have eventually to be built into a harmonious, holistic, integrated basinwide (or sub-basinwide) total picture. Contrariwise, a broad basinwide master plan can provide pointers to local initiatives.

Incidentally, ‘integration’, a word often loosely used, has multiple dimensions. It can mean, illustratively, the integration of:

- water-use and land-use;
- different water uses (agriculture, industry, domestic and municipal uses, and so on);
- water in all its forms (groundwater and surface water, precipitation, and so on) regarded as constituting a unity;
- all water-related activities from local water-harvesting to ‘mega’ projects within a basin or sub-basin;
- all large projects within a basin or sub-basin;
- the different aspects of a multi-purpose project, such as irrigation, hydro-power, flood moderation, navigation, and so on;
- environmental/ecological, social and human concerns with techno-economic planning;
- water quality concerns (seen as an ineluctable part of all water planning);
- all the relevant disciplines (hydrology, engineering, agriculture, sociology, environmental and ecological sciences, law, and so on);
- state and civil society.

Regional Cooperation?

It is often argued that in our water resource planning we must take note of the immense possibilities offered by regional cooperation, particularly cooperation with Nepal and Bangladesh, on the utilisation of the water resources of the Ganga, Brahmaputra and Meghna. This was the subject of a collaborative three-country study project undertaken by the Centre for Policy Research, New Delhi, the Bangladesh Unnayan Parishad, Dhaka, and the Institute for Integrated Development Studies, Kathmandu. The present writer was closely associated with that study. The first phase of the project resulted in four books: one book by each of the institutions, leading on to a ‘consensus’ book entitled Converting Water into Wealth (1994) by all three institutions. The second phase of the project had a twofold objective: the dissemination and propagation of the ideas emerging from the first phase, and further work on some of the identified possibilities; this resulted in a book entitled Cooperation on the Eastern Himalayan Rivers (1999). The basic thesis underlying the entire project was the following:

The GBM region is a resource-rich area, but it is home to a large concentration of the world’s most poor; the water resources of the immense rivers that flow through the region hold promise of an escape from this paradox: water is in fact the magic key to future prosperity in this region; and the countries of the region must learn quickly to cooperate to bring about that prosperity or remain forever locked in grinding poverty.

(That is not a quotation but an encapsulation by this writer). Leaving aside some reservations that one has on that seemingly compelling statement, and wholly endorsing the plea for cooperation, one still needs to ask: in concrete terms, what does ‘cooperation’ mean here? It means essentially cooperation in ‘harnessing’ the water resources of the GBM system(s) by means of a number of major projects such as Karnali, Pancheswar and Sapt Kosi (on major tributaries of the Ganga) in Nepal; Manas and Sankosh in Bhutan and Dihang and Subansiri in India (on the Brahmaputra); Tipaimukh in India (on the Barak); the Ganges Barrage in Bangladesh; and so on. Most of these would be multi-purpose projects with hydro-power, irrigation and flood moderation components; some may also have a navigation element.

We have already seen that such projects have serious adverse consequences not all of which can be foreseen or remedied. Without going over that ground again it needs to be noted that even if these projects do create wealth, they will not eliminate poverty; the wealth and the poverty will be in different hands. The alleviation of
poverty, the ensuring of equity and social justice, the removal of the disabilities of women, children and disadvantaged groups and the ‘empowerment’ of the community, are hard tasks to be tackled with patience, imagination and determination within each of the countries of this region. A preoccupation with big, multi-country projects and the naïve belief that they hold the magic key to prosperity will produce complacency and distract us from what needs to be done.

If water is the key to prosperity, how can one explain the distress that repeatedly strikes Kalahandi which has plenty of water and produces rice? The waters of the Ganga, Brahmaputra and Meghna rivers are not a new discovery. They have been known to, and are being used by, the people living in the areas concerned for generations. The new element that is expected to transform the economies of the three countries is essentially hydro-electric power. However, this needs giant dams and reservoirs in a fragile and seismically active ecosystem. Whether, and if so when, any or all of these projects will in fact come up is a question that no one can answer with any confidence. Meanwhile, what happens to inter-country cooperation?

This is not to argue that there is no need for inter-country cooperation. Inter-country treaties or agreements over river systems that run along or straddle boundaries will of course be necessary. Conflicts may arise in the absence of such understandings, or even in relation to the interpretation of clauses or the actual operation of such agreements; and mechanisms will be needed to resolve such conflicts. The point that is being made here is merely that such cooperation should not be identified with a clutch of big projects or confined to the sphere of governments. There are many other possibilities and compulsions of cooperation. The protection of water sources (rivers, lakes, mountains, forests, aquifers) from pollution, degradation or denudation; the preservation and regeneration of deteriorating wetlands (e.g., the Sunderbans); improving and maintaining water quality; dealing with common problems such as drainage in the Indus basin in both India and Pakistan, or the occurrence of arsenic in aquifers in both India and Bangladesh; coping with floods and minimising damage; sharing experiences in local water-harvesting and watershed development and in the related social mobilisation and transformation: these are among the areas in which inter-country cooperation will be very fruitful, and in some instances very necessary. Such cooperation can be at the level of governments, NGOs, academic institutions or ‘think tanks’, or ‘people-to-people’.

Water Markets?

If engineers and administrators tend to argue for supply-side projects, ‘liberal’ economists and officials of the multilateral financial institutions tend to argue for water markets. To them water is a commodity like any other, governed by the laws of supply and demand: if the state steps out of the sphere and leaves it to the private sector and to the operation of market forces, then supply will meet demand, prices will be right, economy and conservation will be ensured, and conflicts will be automatically resolved by the market. The slogan
is: “water is an economic and social good”. Yes, water is an ‘economic good’ when it is used for industry or agriculture, and perhaps a ‘social good’ when used for sanitation or in hospitals or for fire-fighting; but is ‘social good’ an adequate description of water as a basic human and animal need (and indeed as the sustainer of the environment of which it is a part)? Can water in that basic aspect be reduced to a commodity like cement or steel or fertilisers or soap? Is it not more akin to the air? One is not ruling out water markets; they may have a role to play; but there are important issues of equity, social justice and sustainability that cannot be left to market forces. The glib answer to that will be that these can be taken care of through ‘regulation’, but regulation is far from easy.

The doctrinaire call for ‘privatisation’ includes allowing the corporate private sector to build and operate dams across rivers for hydro-electric power and/or for irrigation. Assuming that the private sector is interested in investing in such capital-intensive, long-gestation, modest-return projects, how are the environmental and social impacts (which have presented serious difficulties to the state in past projects) going to be handled by the private entrepreneur and manager? Supply may match demand but resource conservation may receive scant consideration; resettlement and rehabilitation aspects are likely to be given grudging attention only to the extent that resistance by those affected and public opinion compel such attention; and it is naïve to imagine that market forces will obviate conflicts or provide a magical route to their resolution. Whatever the position in relation to industry, water cannot be left to market forces. One is not arguing for a dominant role for the state, but the alternative is civil society, not the corporate sector.

(B) Large Projects: Reforms Needed

Even if the reorientation recommended above is accepted and adopted for the future, it will not change the past. We are not writing on a clean slate. A number of projects are already under different stages of implementation, and as mentioned earlier, these will need a drastic review. As regards new projects, a few may still (rightly or wrongly) be found necessary, and in respect of these the entire planning and decision-making processes should be overhauled. Planning should be fully inter-disciplinary and holistic. Environmental, human and social concerns should be wholly internalised. Minimum environmental impact and least displacement should be important criteria in project selection. Planning and implementation should be fully participatory, not in the sense of asking for comments on a complex document already prepared by officials but in that of involving and consulting the people from the very beginning. ‘Stakeholder participation’ – part of the Dublin-Rio Principles and currently a fashionable phrase – should become a reality. The National Rehabilitation Policy, under consideration for 15 years, should be quickly finalised and made operational. Public hearings on such projects (on both the environmental and the displacement/rehabilitation aspects) should be mandatory and effective, not merely a ritual to be gone through.

For the purpose of securing ‘informed consent’, the fullest information must be provided to the people. EIAs should be made truly independent of project planners, approvers and implementers. Projects should be made to pass through a stringent appraisal procedure. The Nitin Desai Committee Report (1983) should be fully implemented without any further delay. A minimum financial return should be reintroduced into the criteria for approval, and concomitantly water rates and collections should be revised and rationalised in the light of the Vaidyanathan Committee Report (1992). Alongside this, the service should be improved through the transfer of the management of systems at a certain level (after restoring them to a reasonable status) to water-users’ associations (WUA). The programme known as ‘participatory irrigation management’ (PIM) should be vigorously implemented. (However, it must be noted that this is ‘participation’ only in the limited sense of transferring some responsibilities to the people in the context of a system already built by the state in a ‘top-down’, non-participatory manner.) There should be effective monitoring and post-completion evaluation systems. Familiar and well-recognised weaknesses such as sub-optimal funding, stretching resources thin over too many projects, failure to anticipate cost increases in time and to submit revised cost estimates when a reappraisal is still feasible, failure to provide adequate funds for proper maintenance, and so on, need to be firmly tackled.

(C) Efficiency, Economy, Conservation

There is no easy road to ensuring efficiency and economy in water-use and promoting resource-conservation. Proper pricing (full economic pricing for some uses, and reasonable pricing for others) is very important, but is only a part of the answer. In addition, a consciousness of the scarcity and precious nature of this resource has to be promoted strenuously, using every means and method of influencing behaviour available to us – pricing, regulation, tax incentives and disincentives, awards and other forms of recognition, dissemination of information, well-made media programmes, creation of a social climate of opinion, and so on. If the governments, village panchayats and nagarpalikas, private employers, NGOs, and society in general could adopt water-saving as a prime objective and value, and if opprobrium could attach to profligacy and waste and approbation to careful and economical use, it should be possible to bring about significant changes within a reasonable period of time.

Apart from such a general campaign, economy and efficiency should be actively encouraged in agriculture, industry and water supply systems. Earlier, reference was made to agricultural yield in the sense of output per unit of land. While an increase in that will indirectly mean a reduction in the demand for water, there should also be a direct objective of maximising output per unit of water. (It has been reported that under similar climatic conditions farmers in California get 25 times the output of cotton that Indian farmers are able to achieve. Industry should be compelled to recycle its water to the maximum extent and be allowed only a small allocation of ‘make-up’ water. Even the National Commission makes only modest assumptions regarding such possibilities in its estimates of the industrial demand for water; a more determined and drastic discipline is called for. Waste and loss in public water supply systems should be severely penalised, and the scandal of ‘unaccounted’ water (a euphemism for theft, collusion in unauthorised supply, and failure to bill for supplies made) should be eliminated.

(D) Floods

On this subject, what needs to be done follows from the diagnosis given earlier. A proper flood management policy needs
to be adopted. In flood-prone areas, a flood cushion should be provided in existing dams and in such dams as are built hereafter, and should not be allowed to be eroded by other objectives. The flood reserve should be properly operated so as to obviate the possibility of sudden releases in the interest of the safety of the structure creating man-made floods down below. Embankments seem undesirable on the whole, but where they are considered unavoidable, they should be well maintained, and remedies must be found for the ills that have been experienced. However, what are referred to as ‘non-structural measures’ (for instance, advance information, preparedness and prompt response) are far more important. A network of well-equipped and technologically advanced systems for observation, analysis and warning must be established (or upgraded where they exist), and there should be real-time communication within the country as well as with the neighbouring countries. There should also be good disaster-preparedness and mitigation plans, ready to swing into action at very short notice. As for flood-plain zoning, it may be difficult but a beginning needs to be made in that direction.

(E) Water Quality

What needs to be done in respect of water quality will be clear enough from the diagnosis in Section II. There is nothing new to be added here.

(F) Role of Women

The two objectives that need to be kept in mind in relation to the role of women are (1) reducing their drudgery and burden and (2) giving them a voice in planning and management. As the availability of water gets augmented locally through the kind of reorientation that has been suggested, the burden of bringing water from distant places will gradually diminish and perhaps disappear in due course. As for ‘voice’, this is best ensured by mandating adequate representation for women in all the institutions (panchayats, WUAs, consultative committees, ‘river parliaments’, etc) that are set up for water management at various levels.

(G) Conflict Resolution

Insofar as inter-state river-water disputes are concerned, the adjudication system provided by Article 262 of the Constitution and the Inter State Water Disputes Act 1956 enacted by parliament under that article is very necessary (despite opinions to the contrary) as a last-resort mechanism, and must be made to work better. This has two aspects. First, the delays to which the process is prone at every stage – the establishment of a tribunal; the proceedings of the tribunal and the giving of an award; the notification of the award in the Gazette and its implementation – need to be drastically reduced. Secondly, it needs to be ensured that the award (declared by the ISWD Act to be final and binding) is in fact accepted by all parties to the dispute and implemented promptly and unreservedly. On the reduction of delays, there are specific recommendations by the Sarkaria Commission which remain unimplemented. These have now been reiterated and added to by the National Commission in its report. The details of those recommendations (essentially, some time-limits at each stage) need not be gone into here; what is important is that decisions should be taken urgently. The second issue, namely, ensuring the implementation of the award, is far more difficult. If one of the parties to the dispute, i.e., a state government, refuses to abide by and implement the tribunal’s award, what remedies are available? Here, too, there is a recommendation by the Sarkaria Commission: that the award of a tribunal set up under the ISWD Act should be given the status of a decree of the Supreme Court through the appropriate statutory means. No action has been taken on this either. The Commission that is currently reviewing the working of the Constitution will doubtless go into this subject.

The present writer (as a member of the National Commission on Integrated Water Resource Planning) had put forward a suggestion aimed at (a) removing any scope for a sense of grievance on the part of any of the parties to the dispute, and (b) ensuring that the tribunal’s award is respected and implemented. The suggestion was that an appeal against the tribunal’s award to the Supreme Court – not possible at present – should be provided for through amendments to the ISWD Act and if necessary to the Constitution. The possibility of such an appeal will obviate any sense of grievance, and once the Supreme Court gives its verdict, it is unlikely to be disobeyed. The suggestion was not acceptable to the Commission. (Those who are interested may wish to refer to the separate Note by the author to the Report of the National Commission, as also his article entitled ‘Inter-State River Water Disputes: Some Suggestions’ in Mainstream, June 5, 1999.)

While it is necessary to make the adjudication process smooth and fast, it is even more necessary to facilitate the processes of settlement of disputes through negotiations and agreement. Some institutional means of assisting negotiations through ‘good offices’, conciliation, mediation, and so on, seem desirable. The National Commission expects the River Basin Organisations recommended by it to perform these functions.

Conflicts relating to water can also arise in other contexts and at other levels: between uses or between areas (e.g., agriculture and industry; irrigation/power generation and flood moderation; diversion for irrigation and maintenance of downstream flows for various purposes; rural versus urban needs; and so on). Principles, laws and institutions are needed to deal with these matters. (There is a view that what is needed is a system of clearly defined water rights together with the possibility of trading in those rights, and that this will resolve conflicts. This seems a simplistic view, and it is also fraught with some danger.)

There is also the possibility of conflict between the people and the state. It must be noted that in the context of the ISWD Act ‘inter-state river-waters disputes’ means inter-governmental disputes. Implicit in this is the assumption that rivers are resources of the state to be dealt with by the governments for the people. This fails to recognise that the people could have concerns and interests of their own, and that there could be conflicts between these and the aims and purposes of the government. This point (among many others) has come up in the case relating to the Sardar Sarovar Narmada Project.

In Rajasthan, when community initiatives resulted in water reappearing in rivers and streams that had been dry for years, the state claimed the right of control over those waters for the purposes of allocation, licensing fisheries, etc. The dispute has not become acute, and some kind of a modus vivendi seems to have been worked out, but the legal issue remains and could come up again in a future case. Again, reference was made earlier to a kind of ‘parliament’ established by the people for dealing with the waters of the Arvari river and resolving conflicts relating to those waters. This is purely an informal body without any statutory backing, and any authority it has acquired by common
consent in civil society can be taken away by the state if it so desires. This needs further consideration.

(H) New National Water Policy

The discussions of various issues in this paper clearly indicate the need for a thorough review of the National Water Policy of 1987. Having regard to the importance of water, the federal structure of this country, and the nature of the allocation of responsibilities in respect of water in the Constitution, the need for a national consensus on a policy framework was felt, and it was this that led to the formulation of the NWP 1987. The aim was to get all the states to subscribe in broad terms to a minimal set of propositions of a general nature, which could then form an agreed basis for more detailed policy-making and action plans. National consensus of a kind, with some compromises, was indeed achieved, and the NWP was adopted in 1987. That was doubtless an important milestone, but the achievement should not be exaggerated. Looking back on it now with the wisdom of hindsight, an unsympathetic critic could say that the National Water Policy was a good beginning but did not go far enough; and 12 years after its adoption, it still remains a set of general propositions that have not been operationalised to any significant extent.

It is clear enough that if the NWP were being drafted today, it would need to show a much greater awareness of the present climate of opinion in regard to many matters such as environmental and ecological issues, ‘sustainable development’, human rights, questions of displacement of people and their resettlement and rehabilitation, the impact of development activities on disadvantaged sections of the society and on tribal communities, the need to remove women’s disabilities and ‘empower’ them, and so on. The increasing acceptance of ideas such as a ‘participatory’ approach to project planning, the involvement of ‘stakeholders’, the need for public hearings, the transfer of the management of irrigation systems at a certain level to farmers’ associations (‘PIM’ or ‘IMT’), and so on, would need to be recognised. The growing awareness of the importance of local water-harvesting and watershed development activities, the imperative of social mobilisation in this context, the ‘success stories’ in this regard and the need for a manifold replication of these into a national movement, would need to be reflected. The rediscovery of value in traditional systems of water harvesting and management, and the movement for restoring the role of the community in the management of common resources would need to be taken note of. The promotion of a consciousness of scarcity and of the crucial importance of water management will have to be central to the new policy. The recognition of access to water as a basic human right, and a profound concern for equity and social justice, will have to be the governing considerations in redrafting the NWP.

It would also be necessary to go into the broad approach that should govern the relationship between co-riparian states on inter-state rivers,20 as also the future of panchayats and nagarpalikas in relation to water management. Lastly, some of our important river systems are trans-boundary systems and involve negotiations with neighbouring countries (Nepal, Bangladesh); the new policy may have to take note of this dimension.

The concerns and considerations outlined above seem to call for a fresh exercise of drafting a new policy document rather than an incremental approach of amendments and additions. (The National Commission has also said this.) The document so prepared will need to be accompanied by a detailed blueprint for converting its generalities into operational plans; without such a blueprint the whole exercise of a redrafting of the NWP will become pointless.

During the last few years, an attempt to revise the NWP of 1987 has been in progress at the governmental level, and the resulting document was placed before the National Water Resources Council at its fourth meeting held recently (on July 7, 2000). The draft failed to receive approval because of reservations of diverse kinds on the part of different state governments. This is a matter for relief rather than regret, as the draft under consideration was a wholly internal governmental exercise. The draft has been referred to a committee of ministers, central and state. The document should now be put into the public domain, and a series of broad-based meetings involving all concerned held at various places in the country for wide-ranging discussions.

(I) Review of the Laws

Several of the changes and reforms suggested in this paper may require legal underpinning. Alongside of the review of the NWP there should also be a comprehensive review of the totality of laws relating to or having a bearing on water. The following is an enumeration in summary terms of the aspects that need to be gone into.

(1) Federalism

(a) Entries Relating to Water in the Constitution:

The primary entry relating to water is Entry 17 in the state List:

Water, that is to say, water supplies, irrigation and canals, drainage and embankments, water storage and water power subject to the provisions of Entry 56 of List I.

Entry 56 of the Union List (to which Entry 17 in the State List has been made subject) runs as follows:

Regulation and development of inter-state rivers and river valleys to the extent to which such regulation and development under the control of the Union is declared by Parliament by law to be expedient in the public interest.

In terms of the constitutional provisions, the central government could perhaps have played an important role in relation to inter-state rivers, if it had got the necessary laws passed by parliament, particularly as most of India’s important rivers are inter-state rivers. However, the centre has not made (or been able to make) significant use of the enabling provisions of Entry 56. There has been a good deal of discussion on whether water should in fact have been put in the Concurrent List, and whether the Constitution should now be amended to bring this about. This has already been referred to earlier. While it was suggested there that we should proceed with whatever reforms are required without waiting for constitutional amendments to put water in the Concurrent List, the question whether the structure of entries relating to water in the Constitution is a sound one and whether any changes are required cannot be dismissed as an unimportant one; it needs to be gone into. If the National Commission to Review the Working of the Constitution (NCRWC) is not already seized of this matter, it should be referred to it.

(b) Third Tier in the Constitution:

The Eleventh and Twelfth Schedules to the Constitution lay down lists of subjects to be devolved to the panchayats and nagarpalikas. The lists include, inter alia, drinking water, water management, watershed development, sanitation, and so on.
It seems likely that in future this third tier will come to play an important role in relation to water-resource development. However, the processes of decentralisation are still evolving, and the role of the third tier is as yet only incipient. What full decentralisation will entail, and what legislation, if any, will be called for will have to be gone into carefully.

(c) NWRC, NWP:
The National Water Resources Council (NWRC) is an important element in Indian federalism in relation to water resources, but it is only an institution established by a resolution of the government of India and has no statutory backing. Its prestige and influence are derived from its composition with the prime minister as its chairman, the union minister of water resources as vice-chairman and all state chief ministers and several central ministers as members. The National Water Policy 1987 approved by it is not a law; it has only the force of consent. It is sometimes suggested that the NWRC and the NWP should be given a statutory backing, but it is not clear whether this is in fact necessary, and if so how (under what entries in the Constitution) this can be done. This writer’s view is that this is unnecessary, but perhaps this issue too could be referred to the NCRWC.

(d) Inter-State Water Disputes:
The issues referred to earlier in the subsection on ‘conflict resolution’ need to be dealt with without further loss of time. The necessary amendments to the ISWD Act, and to the Constitution, if necessary, should be put through as quickly as possible.

(2) Drinking Water
Among water uses, the NWP assigns the first priority to drinking water, but whether the operationalisation of that priority would require any legislative backing needs examination. Access to safe drinking water should be recognised as a basic human (and animal) right. Perhaps this is implicit in the right to life, but a separate and direct recognition might be useful. (The other priorities in the NWP, i.e., irrigation, industrial use, navigation, etc., cannot be absolute; they will necessarily vary in accordance with circumstances. Incidentally, it is interesting that in its scheme of priorities the NWP does not recognise environmental rights, for instance the rights of aquatic life, or the right of the river itself.)

(3) Ownership Rights: An Asymmetry
There is an asymmetry in Indian law between flowing surface water and groundwater. In respect of the former, the law does not recognise ownership rights; there are only rights of use. However, in terms of the Indian Easements Act, the ownership of land carries with it the ownership of the groundwater under it, subject to regulation and control by the state. This leads to inequities: a rich farmer can install power-driven tubewells or borewells in his land and their operation can make dugwells in the neighbourhood run dry; he can sell water so extracted to his poorer neighbours even though the water may come from a common aquifer; and he can deplete the aquifer through excessive exploitation. The easement right makes regulation difficult. This problem needs to be dealt with.

Incidentally, in the context of the advocacy of water markets (‘define water rights and allow trading’), the question arises: if water is either a state resource or a community resource, and what a user (an individual or an institution) gets is a use right, how can he (or she or it) have a surplus for sale, except temporarily and under special circumstances? This may seem an odd conundrum to raise, because we know that water markets do exist and serve some useful purposes; but there are difficult issues involved. (The state or the community may of course authorise a private entrepreneur or a cooperative society to set up a water supply agency, supply water in bulk to that agency from public or community sources, or allow that agency to put up its own project for generating the supply by constructing a dam or installing tubewells, and permit it to undertake commercial supplies. However, this is not a case of ‘defining water rights’.)

(4) Civil Society and State
Insofar as river waters are concerned, the Irrigation Acts of the various states vest the control in the state governments. Whether this is merely ‘control’ or ‘ownership’ makes no material difference. The ultimate authority to decide on the use of the waters rests with the government. This eminent domain makes community initiatives problematic. Reference has already been made to the difficulties that arose in Rajasthan, where people found that they could bring rivers and streams back to life through their own efforts but had no clear rights over the waters so generated. Though the conflict between state and civil society has not become acute in this case, the potential for future difficulties exists. The Arvari parliament is an exciting development and needs to be replicated in other places, but there is no legal basis for such an institution. It must be recognised that the present legal framework in the country does not favour such community initiatives; it is in fact hostile to them. This is a problem that needs urgent attention if we wish to promote a greater role for civil society in water management.

Another related problem is that of the relationship between such civil society organisations and panchayats. Should panchayats themselves be made responsible for water-harvesting activities? In the commands of major irrigation projects, should panchayats and Water Users Associations be identical? If there are separate organisations for such water management activities, what is their standing vis-à-vis the panchayats, and what should be the role of the latter? The legal aspects of these issues need to be looked into. (Even with decentralisation, panchayats and nagarpalikas are still forms of ‘state’, and the question of the relationship between the people and the state remains.)

(5) A National Water Code?
It was mentioned earlier that there was a good deal of waste in all uses of water (domestic, municipal, industrial, agricultural). There is also profligacy in water use, and use for luxurious purposes by the affluent. Can this be dealt with entirely through economic instruments (incentives and disincentives)? Should we go beyond pricing and taxing and try to control waste and profligate/luxurious uses and enforce economy and conservation in some manner? If so, is there need for some kind of legislation for the purpose? This question was raised at some of the Regional Conferences organised by the National Commission before it wrote its report. An idea that was put forward was that there should be some kind of a National Water Code (as in some countries). It is difficult to see how such a Code can be enacted in our federal structure but the issue needs consideration.

(6) Major Projects
(a) EIAS:
It was mentioned earlier that EIAs should be made independent of project planners and managers. The kind of professional
code that exists in the medical and auditing professions needs to be introduced into the world of EIA consultants as well. There should be a charter for them and this would imply an Act.

(b) Stakeholder Participation:
‘Stakeholder participation’ has become a fashionable word, but is not a reality yet. The first requisite is the free flow of information. In this context a reference must be made to the notorious Official Secrets Act which creates a veil of secrecy around governmental actions, keeps the people at a distance, makes things as difficult as possible even for individuals and nongovernmental organisations (NGOs) with a proven record of service to the people, hampers academic studies, and in general renders all talk of ‘participatory’ or ‘people-centred’ planning meaningless. This is a widely recognised evil. There has been a movement for reform and for a ‘Freedom of Information Act’. One must hope that such an Act will come into being soon.

(c) Displacement/Rehabilitation:
(i) The Land Acquisition Act, dating back to the nineteenth century, under which private land is acquired by the state for a public purpose, is the principal instrument of displacement. The actual operation of the Act has been beset with problems in many cases. It is generally agreed that major changes are necessary in the Land Acquisition Act and the related procedures.

(ii) Some state governments have tried to provide project-affected persons (PAPs) with rights in the command area. Mention may be made of the Madhya Pradesh Project Affected Persons Resettlement Act (Pariyojana ke Karan Visthapit Vyakti Punahsthapan Adhiniyam) 1985; the Maharashtra Project Affected Persons Rehabilitation Act 1986; and The Karnataka Resettlement of Project Displaced Persons Act 1987. While these Acts are on the statute book and contain some enlightened provisions, it cannot be said that they have been fully put into practice. Similarly, well-intentioned provisions such as the collection of a ‘betterment levy’ from farmers whose lands get the benefit of irrigation at state expense, or a lower land ceiling for irrigated land as compared with unirrigated land, have remained largely unimplemented. These are important areas needing attention.

(iii) Public hearings are now a statutory requirement in respect of such projects, but this is essentially in the context of an environmental clearance. The hearings should also cover the displacement/rehabilitation aspects. A ‘rehabilitation clearance’ similar to the environmental clearance (or ‘financial closure’ in the case of power projects) should be made a statutory condition before work on a major WRD project can begin.

(iv) The rights of access of people in the submergence areas and in the upper catchments to the natural resource base on which they depend should be statutorily recognised.

(v) A grievance redressal machinery in the form of an ombudsman should be made a statutory requirement in the case of all such projects.

(vi) The National Rehabilitation Policy which has been under consideration for years should be quickly finalised and given statutory form.

(vii) The PIM programme and the establishment of WUAs under it need legal backing. The AP government has already passed an act for the purpose. This should be done in all states.

(7) Other Matters
Other matters such as flood-plain zoning, pollution control, water quality, groundwater regulation, and so on, will also necessitate a review of the existing (or absent) legal underpinning. The antiquated Irrigation Acts too will need an overhaul.

What is called for is a comprehensive review of all the laws having a direct or indirect bearing on water, with a view to improving their relevance and effectiveness, filling gaps, and building up a coherent, inter-related, integrated structure (or ‘architecture’ to borrow a term which is in vogue in another context).

(J) Institutional Reform
Some institutional issues have figured in earlier sections: for instance, improving the effectiveness of the NWRC; the PIM programme and the formation of WUAs; providing an institutional machinery for conciliation and mediation in the context of disputes relating to inter-state rivers; water markets; public hearings as well as a grievance redressal machinery (‘ombudsman’) in the context of large projects; ensuring the professional independence of EIAs; fostering the civil society institutions needed for local water management initiatives; and so on. That ground need not be gone over again. Nor is it necessary to go into the reorganisation and restructuring of bureaucracies at the central and state levels, as there is no dearth of recommendations on that subject (see for instance the report on the organisational and procedural change requirements in the irrigation sector, brought out by the Central Water Commission; and the discussion on institutional aspects in the Report of the National Commission).

(Similarly, it is not proposed to go into the question of river basin organisations; there is a detailed discussion of that subject in the report of the National Commission. One has doubts about the workability of the kind of RBOs that they have suggested; the structures of both the general assembly and the executive committee seem cumbersome and unwieldy. In any case, the report is presumably still under consideration, and meanwhile the very idea of river basin organisations appears to have been rejected for diverse reasons by the state governments at the last meeting of the NWRC. Elsewhere in the world different countries have been able to come together in Commissions on shared rivers, but it appears that our state governments are mortally afraid of an erosion of their powers by any such body!)

From the point of view of this paper, the details of organisational restructuring are not as crucial as the spirit that should guide and inform the process. Broadly speaking, the following are the important considerations:

– ensuring inter-disciplinary functioning;
– integrated or at least coordinated functioning rather than compartmentalisation and fragmentation;
– openness and readiness to share information;
– a realisation that there is wisdom outside the government, and in particular, that there is a great deal to be learnt from traditional systems and practices of water management;
– a willingness and a capacity to work with the people and NGOs.

Organisational change will have to be accompanied by a concerted effort at a reorientation of attitudes (or ‘mindsets’, to use the currently fashionable word). The success of whatever is undertaken in relation to water (or anything else) is crucially dependent on a constructive partnership between the state and civil society.

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A Final Question

The kind of overhaul of policies, procedures, laws and institutions that has been advocated in this paper will undoubtedly be difficult to bring about, and may seem naive or unrealistic. In discussing the changes felt to be needed we sooner or later encounter the statement that ‘politics’ will come in the way. For instance, stopping the thin spreading of resources on too many projects, pricing water properly, regulating the exploitation of ground water, giving PAPs the first claim on the benefits expected from the project, ensuring equity between head-reach and tail-end users in a canal system, resolving inter-state water disputes in a fair and harmonious manner, enforcing economy in the use of water, shifting the focus from big, ‘top-down’ projects to local community initiatives, and so on, may be sensible things to do, but ‘politics’ of various kinds and at various levels may render them very difficult to achieve. This paper can provide no easy answer to this; it can only say that we must keep patiently exploring possibilities and seizing opportunities when they occur. 

Annexe

[Presented at (1) Regional South Asia Meeting on Water for Food and Rural Development, New Delhi, June 1-3, 1999, and (2) Regional Workshop to Develop a South Asia Water Vision, Colombo, June 27-29, 1999.]

South Asia Water Vision: What Kind of a Future World are we Envisioning?

(1) A Sane World

A world neither of undue luxury nor of excessive austerity, but of modest comfort. (Water demand projections to be derived from a world so visualised.)

(2) A Humane World

(a) Access to water as a basic human and animal right to be recognised and respected (Right to be non-discriminatory).
(b) Entitlement/access to food to be ensured.

(3) A Caring World

(a) Women not to be put to undue hardship in fetching and managing water for the household.
(b) The needs of the weak, the handicapped, the aged, the disadvantaged and the poor to be adequately taken care of. (Query: should we assume the continuing existence of the poor in the world we are imagining?)

(4) An Equitable World

(a) Divisions such as rich-farmer/poor-farmer, head-reach/tail-end, etc, (and the concomitant differences in political power) to be eliminated or mitigated.
(b) Women to be empowered as providers, users and managers of water.
(c) Inequities within the family (eg, in relation to women, the girl-child, etc) to be eliminated.
(d) Differences between urban and rural ‘entitlements’ to be removed or minimised.
(e) Projects and schemes (big or small, simple or sophisticated, local or of a wider compass, low-cost or high-cost): (i) alternatives not involving displacement or dispossession of people to be preferred; (ii) the full participation of all concerned (all ‘stakeholders’) – institutionalised, with proper legal backing – to be ensured right through, from the earliest planning stages to completion and operation; (iii) equity as between people in the upper catchments and the submergence area on the one hand and those in the command area, i.e., between those who bear the social costs of a project and those who enjoy its benefits, to be a prime concern.

(5) An Efficient World

(a) For increasing the availability (i.e., utilisable quantum) of water resources, least-cost options (financial, economic, environmental, social), to be preferred.
(b) Economy in water-use to be promoted; waste in all uses to be eliminated or minimised.
(c) Value (i.e., utility) from each unit of water to be maximised.

(6) A Sensible World

(a) Water for agricultural, industrial, transportation (IWT), and recreational uses to be regarded as an ‘economic good’, and full demand for water recovered. Concessions for poor farmers, small industries, boatmen, etc., to be carefully ‘targeted’ and regulated.
(b) In pricing water, the scarcity of this resource and the need to conserve it to be an important factor.
(c) Water for life-support (a basic human right) not necessarily to be free except for the very poor; in other cases reasonable, though not full, charges to be recovered.

(7) A Sustainable, Harmonious World

(a) The mutually sustaining role of water and the natural environment (and the ecological system) to be kept in mind always.
(b) The water rights of aquatic life (fish, birds, even riparian communities), of the larger environment, and of the river itself, to be given due recognition.
(c) The maintenance of the quality of water (surface, ground) and its preservation from deterioration and pollution/contamination to be the prime duty of all users.
(d) The extraction of groundwater for use not to exceed the annual recharge, except under special circumstances and for limited periods.
(e) In all water-resource planning, apart from the environmental rights mentioned above, the rights to future generations to be an important consideration; natural resources and the environment to be held in sacred trust for the future.

Notes

14 The idea of a shortage of water in the Ganges leads to proposals for the ‘augmentation’ of those waters. On this, see the author’s ‘The Fallacy of ‘Augmentation’’, Economic and Political Weekly, Bombay, August 14, 1999.

For instance, water levels in various wells in the village Buja in Rajasthan went up from 0 to 44.5’; from 3 to 40.3, from 10’ to 66’, and so on as a result of the promotion of water-harvesting activities by Tarun Bharat Sangh. (Johad, published by the UN Inter-Agency Working Group on Water and Environmental Sanitation, October 1998.)


16 The essential parts of the PIM programme would include: good maintenance of that part of the system that remains in the hands of the government; appropriate financial provisions for such maintenance; a proper legal form for the WUA; a sound contractual relationship between the government and the WUA with penalties for failures to deliver water as agreed; charging for the water supplied on a volumetric basis with freedom to the WUA to fix rates for recoveries from members; provisions to protect the interests of women and smaller farmers in the WUAs; and so on.

18 Mentioned by Garry Jacobs at a meeting in the Planning Commission.

19 The water requirement for industrial development is estimated by the National Commission at 103 km3 in the year 2050 on the basis of the present rate of use of water, and at 81 km3 on the assumption of “a significant breakthrough in the adoption of water-saving techniques”. A saving of roughly 20 per cent in the industrial water demand can be expected. Any projections based on the current rate of use does not seem a striking improvement.

20 Should the NWP include or be accompanied by a declaration of water-sharing principles? In theory this seems unexceptionable, but in practice the prospects are not promising. The Ministry of Water Resources did attempt a statement but this has not found general acceptance, because of a divergence of views among the state governments. One does not know when a national consensus on water-sharing principles will be achieved. Many years may pass in this process. Nor is it clear that the process of conflict-resolution will be greatly facilitated by any document that emerges from such an exercise: it is unlikely to set forth any principle other than that of equitable apportionment (which successive tribunals have been trying to apply), and it is bound to be couched in very general terms which will still need detailed elaboration and application in each case with reference to the facts and circumstances of the case. In any case, the resolution of the disputes that have actually arisen cannot be deferred until a national policy on water-sharing has been adopted.

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for Integrated Development Studies, Kathmandu.


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