Linking of Indian Rivers:
Some Questions

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Introductory

In pursuance of a direction from the Supreme Court the Government of India has set up a task force for considering the modalities of implementing a project for the linking of the rivers of India, and the Prime Minister has declared that this task will be taken up on a war-footing. Three questions arise: first, whether the Supreme Court was right in issuing this direction; secondly, why the Government responded with such alacrity and enthusiasm; and thirdly, whether the idea of 'linking of rivers' (or 'inter-basin transfers' as it is sometimes referred to) is a sound one on merits.

Judicial Activism or Error?

First, is this a legitimate venture in what has come to be known as judicial activism? Please note that the question posed is not whether judicial activism is legitimate, but whether this particular direction is a legitimate exercise of judicial activism. (To obviate misunderstanding it may be stated that this writer shares, with some reservations, the prevailing admiration in this country for judicial activism.)

Generally, when the judiciary stretches its scope or jurisdiction or concerns, the objective is to secure human rights or ensure justice or protect the environment; and even that last-mentioned objective can be regarded as an attempt to ensure the human right to a clean environment. No such justification is available in the present case. The Supreme Court can hold that the right to drinking water is part of the right to life, and can direct the state to ensure that that right is not denied; but precisely how that right is to be ensured is not within the domain of the judiciary. There are many different ways in which the future drinking water needs of the people can be met, and the linking of rivers is only one of the ideas mooted in this context. The Supreme Court could have directed the state to take steps to see that the need is met without specifying the particular route to be chosen for this purpose.

Moreover, it is by no means clear that there is a direct link between the right to water and the linking of rivers. The 'human right' to water is invoked in the context of water as life-support, i.e., drinking water. Drinking water is only a small part of total water needs. The really large demands for water usually arise in the context of irrigation which accounts for upwards of 80% of our usable water resources. It is for meeting those huge demands that big projects – large dams, long-distance water transfers, the linking of rivers – are mooted. Thus, the link with human rights that justifies judicial activism cannot be invoked in aid of a direction for the linking of rivers. (Even if we assume that the right to food implies a right to water for irrigation - a questionable assumption - this does not necessarily translate into a right to the linking of rivers.)

It could be argued that the demand for irrigation water leads to conflicts over river waters and that the judiciary is concerned with conflicts and their prevention; but here again, the judiciary is only entitled to say: " Find ways and means of avoiding conflicts over river waters", and not: "Transfer waters from surplus to deficit rivers for augmenting the flows of the latter and obviating conflicts". (A further point is that even assuming that such a transfer may help in obviating conflicts in relation to the recipient river, it may in fact generate a conflict in relation to the river from which the transfer is to be effected.)

A form that judicial activism has taken in this country is the assumption of the right to ask public authorities why they have not been discharging their

responsibilities. The present case cannot be brought under that umbrella either. The Supreme Court seems to have assumed that the linking of rivers was an accepted idea that has been languishing for decades for want of attention and action. If so, a direction to accelerate action may seem a legitimate exercise of judicial activism. That is not the case. As will be pointed out later, there was no river-linking project on the anvil when the writ petition was taken up by the Supreme Court. The idea is doubtless an old one, but there have always been doubts about its soundness and practicability. The Government's initial submission to the Supreme Court in response to its inquiry was a very cautious one. What the Supreme Court has done is to foist a new decision on the Government, give it a priority, and virtually mandate an allocation of funds.

All these points lead to the conclusion that the Supreme Court's direction in this case was not at all a defensible instance of judicial activism. One wonders whether it was a *judicial* act at all.

Further, the judicial direction has been given in advance of the usual processes of formulation, examination and clearance of a project. We shall revert to this. Lastly, and this is a very important point, the citizen usually has the right to move the courts with writ petitions against executive action on certain grounds, but that possibility seems to be ruled out in a case in which executive action is taken in pursuance of a judicial direction. It is ironic that the Supreme Court, which is usually anxious to assert its power of judicial review, has lost it in this case by becoming a party to executive action.

(Incidentally, the Supreme court's order in this case was one of the last to be issued before the retirement of Chief Justice Kirpal. Some time later, Justice Kirpal was reported to have explained that the Supreme Court's pronouncement in this case was not really in the nature of an order. Assuming that such an informal post-retirement explanation can be used to interpret a judicial pronouncement, one does not know what to make of it. The PIL was about the linking of rivers; the SC asked the Government of India about the possibility; the Government made a cautious submission; the SC then asked the Government to accelerate the linking and to set up a task force – not to examine the idea but to go into the modalities of implementation. That sounds very much like a direction, and it has been so taken by the Government. Certainly, it was an interim direction, but it was definitely a pronouncement with reference to the PIL and not a casual observation or an *obiter dictum*.)

The Government's Response

The Government of India is bound to act on a direction of the Supreme Court, but it is interesting to observe that it has done so with uncharacteristic promptitude and enthusiasm. The reasons for this are not far to seek. The Supreme Court has presented the ruling party with a politically attractive proposition, and that party has been quick to adopt it and make fervent declarations: it evidently hopes to extract considerable political advantage out of this dramatic project (or clutch of projects). The Opposition, for its part, cannot afford to be seen as opposing an idea that seems to be in the national interest, and has been obliged to welcome it.

That is the political dimension; there is also a bureaucratic angle. The Ministry of Water Resources at the Centre has for long been trying to enlarge its role, but has been finding this difficult because of resistance by the State bureaucracies. The MoWR has been arguing the case for the transfer of 'water' to the Concurrent List, but with little prospect of success. Against that background, the Supreme Court's direction on the linking of rivers must have been very welcome to it, because any such large national undertaking on inter-State rivers is bound to enlarge its role substantially. Not only is its 'clout' *vis à vis* the State bureaucracies likely to increase, but its relative importance among the Ministries at the Centre may also go up. Its position will be further strengthened if there is new legislation to underpin the river-linking idea.

Further, it is interesting to note that the Prime Minister, who gave a resounding call at the meeting of the NWRC on 1 April 2002 for a national campaign on rainwater-harvesting and for the recognition of the community as the custodian of water resources, has not set up any task force to promote those ideas, but has done so promptly on the linking of rivers, and that there is considerable excitement in governmental circles over this idea. Gigantism always casts an irresistible spell on our bureaucracy and technocracy as well as on our politicians.

(One is dismayed at the thought of the enormous 'opportunities' that public expenditures of the magnitude involved will present to certain elements

in the bureaucracy/ technocracy and the political class; but that is another story.)

Historical Background

Let us turn now to a consideration of the nature and merits of the proposition. The notion of the linking of the rivers in the sub-continent is an old one. In the 19th Century, Sir Arthur Cotton had thought of a plan to link rivers in southern India for inland navigation. The idea was partially implemented but was later abandoned because inland navigation lost ground to the railways. Even the canal that was constructed went into decline.

A phrase that caught the imagination of the people and passed into popular parlance was 'Garland Canal'. This idea (which was not quite the same as the linking of rivers) was mooted by Capt. Dinshaw J. Dastur, an air pilot. It was merely a fanciful notion that never commanded respect among knowledgeable people. The catchy phrase refuses to die and keeps surfacing from time to time, but does not merit serious discussion here.

An idea that has exercised the minds of the Indian water-resource planners for a long time is that of tapping the surplus resources of the mighty Brahmaputra. A significant part of the water resources of India, estimated in terms of the flows near the terminal points of the river systems, lies in the Brahmaputra, which, unfortunately, is in a remote corner of the country, far from the areas where the demand for water is high. There has therefore been a preoccupation with the idea of a transfer of water from that river to places where it is needed. In the talks with Bangladesh over river waters in the seventies, India proposed a gigantic (100000 cusec) Brahmaputra-Ganga gravity link canal taking off from Jogighopa in India, passing through Bangladesh, and joining the Ganga just above Farakka. The proposal was rejected by Bangladesh for many reasons, at least some of which were and continue to be valid; that scheme is virtually dead. An alternative link canal passing entirely through Indian territory (the Siliguri chicken-neck!) will involve large lifts and seems likely to be both non-viable and questionable from other points of view, even if it is physically feasible and the money can be found. The idea has not been seriously pursued, and for good reason. We must disabuse ourselves of the notion that the vast waters of the Brahmaputra can be diverted westwards or southwards. At best we can think in terms of some minor transfers within the eastern region.

Dr. K.L. Rao's proposal of a Ganga-Cauvery Link was another idea that (like Captain Dastur's 'Garland Canal') appealed to the general public and acquired an enduring life. As envisaged by Dr. Rao, the link was to take off near Patna, pass through the basins of the Sone, Narmada, Tapi, Godavari, Krishna and Pennar rivers, and join the Cauvery upstream of the Grand Anicut. It was to have been 2640 km long, withdrawn 60000 cusecs from the flood flows of the Ganga for about 150 days in the year, and involved a lift of a substantial part of that water over 450 metres. The scheme was examined and found impractical because of the huge financial costs and the very large energy requirements. However, the idea survives in the popular mind and comes up whenever water scarcity is felt and conflicts (such as the Cauvery dispute) become acute in the southern parts.

The project currently under discussion is based on the work done by the National Water Development Agency.

NWDA's Proposals

Having ruled out the idea of a Ganga-Cauvery link as unworkable, the Ministry of Water Resources (or whatever it was called then) brought out a booklet on the National Perspective for Water Development in August 1980. In pursuance of the perspectives set forth in that booklet, the National Water Development Agency (NWDA) was established in 1982 for working out basin-wise surpluses and deficits and studying the possibilities of storages, links and transfers. During the last two decades the NWDA has been working on this and producing reports. It undertook the studies in two main components, namely the Himalayan Rivers component and the Peninsular Rivers component.

The Himalayan component envisages a number of links, including some within the Ganga system, some between neighbouring rivers in the Brahmaputra system, a couple between those two systems, one long link from Sarda to Sabarmati through the Yamuna and Rajasthan, and one from the Ganga to Subernarekha and then on to Mahanadi. The general idea is to transfer waters to southern UP, Haryana, Punjab, and Rajasthan, and perhaps eventually southwards to the peninsular component. As the Himalayan rivers are

shared with other countries (Pakistan, Nepal, Bhutan, Bangladesh) transfers from them westwards and southwards are likely to involve international implications, and may not be easy. The Peninsular Rivers component involves a number of links, of which the most important would be those connecting Mahanadi, Godavari, Krishna, Pennar and Cauvery. The details are given in the Table below.

1	2	3	4	5
S.N.	Name of Link	From River	To River	Annual volume of Transfer (mm^3)
1.	Manibhadra to Dowleswaram	Mahanadi	Godavari	11,176 (6500)*
2.	Inchampalli to Nagarjunasagar	Godavari	Krishna	16,426 (14,200)
3.	Inchampalli to Pulichintala	Godavari	Krishna	4371
4.	Polavaram to Vijayawada	Godavari	Krishna	4903 (3305)
5.	Almatti to Pennar	Krishna	Pennar	1980
6.	Srisailam to Pennar	Krishna	Pennar	2310 (2095)
7.	Nagarjunasagar to Somasila	Krishna	Pennar	12,146 (8648)
8.	Somasila to Grand Anicut	Pennar	Cauvery	8565 (3855)
9.	Kattalai Regulator to Vaigai to Gundar	Cauvery	Vaigai	2252

Source: Report of the National Commission for Integrated Water Resources Development Plan, September 1999.

*In column 5, the upper figure indicates the gross diversion while the lower figure in brackets gives the quantity reaching the recipient river. The difference is explained by utilization and losses *en route.*

Other links not included in the above Table would include Ken-Betwa, Parbati-Kalisindh-Chambal, Par-Tapi-Narmada, Damanganga-Pinjal, etc. Another idea is the partial diversion of certain rivers flowing into the Arabian Sea eastwards to link with rivers flowing into the Bay of Bengal (Bedti - Varda, Netravati – Hemavati, Pamba – Achankovil – Vaippar).

Rationale of Project

The project is often claimed to be the answer to the country's problems of recurring floods and drought in different areas; the generation of hydroelectric power is also put forward as a justification. Neither flood control nor hydroelectric power calls for a linking of rivers. In the case of hydroelectric power, the usual practice is to postulate a 'potential' in some rivers or areas (for instance, Narmada, Brahmaputra, the North-east of India, Nepal) and propose large projects (Sardar Sarovar, Dihang, Subansiri, Tipaimukh, Karnali, Pancheswar, and so on) to exploit that potential. Each such project will need to be looked at carefully, but what needs to be noted in the present context is that while the need for hydroelectric power may lead to the formulation of particular projects in specific locations, it would not by itself take us to the idea of linking rivers. (Incidentally, the linking of rivers or inter-basin transfers would in the generality of cases *require* much energy – normally in excess of what the project generates – but in this case we are told that the project will be a net generator of large quantities of power: a figure of 35000 MW has been mentioned. That strains our credulity and will need careful examination.) Similarly, the problem of recurring floods in certain rivers or areas may lead (rightly or wrongly) to the formulation of specific projects with flood control as one of the objectives (or a primary objective) – for instance, the DVC projects, a high dam on the Kosi, and so on - and will not by itself call for a linking of rivers.

It must also be noted that opinion on flood control has changed over the years. It is now generally recognized that big dams play only a modest role in flood-moderation; that even in those projects (not many) where flood cushions have been built in, that cushion tends to get eaten into by the more powerful demands of irrigation and power-generation; that considerations of the safety of structures sometimes necessitate the release of waters causing 'man-made' floods downstream; that by and large, the old notion of 'flood control' has to change to the newer ideas of learning to live with floods and minimizing damage; and that this requires a relatively greater reliance on non-structural than on structural measures. By now, this has almost become conventional wisdom. Even if all the river-linking proposals are implemented, the contribution that this will make to the mitigation of the flood problem will not be substantial.

As regards drought, we have the answers already. Rajendra Singh has shown in Alwar District in Rajasthan that rainwater-harvesting can be practised successfully even in low-rainfall areas. Earlier, Anna Hazare had brought about a transformation through water-harvesting (along with other measures) in Ralegan Siddhi (which is also a low-rainfall area). The Madhya Pradesh Government has initiated large Statewide programmes of water-harvesting and conservation. In the water-scarce parts of Gujarat, some good NGOs have remarkable achievements in this regard to their credit. Dhan Foundation has been doing good work in the southern States. The 39000 tanks in Tamil Nadu and a similar number in Karnataka were remarkable water-management systems that have gone into decline, and efforts are on to restore and rehabilitate them. In brief, the primary answer to drought has to be local; it is only thereafter, and in some very unpromising places, that the bringing in of some external water may become necessary. Besides, the river-linking project, if implemented, will take water only to a small part of the arid or drought-prone areas; large parts of rainfed areas will remain unaffected and will need to help themselves through the local augmentation of water availability.

A further point to be kept in mind is that it is not primarily drinking water needs - which involve small quantities and can be generally met through local schemes of rainwater-harvesting and groundwater-recharging - but the large demands of irrigation that lead to proposals for long-distance water transfers, though the waters so transferred may also be used to meet drinking water requirements. Water transfers for irrigation may be proposed either for providing additional water to areas already under irrigation, as the water available for irrigation in that area or basin is considered inadequate, or for extending irrigation to arid or 'rainfed' areas. In both cases, difficult questions arise. In irrigated areas (for instance, the Cauvery basin), should large demands for additional irrigation water be unquestioningly accepted and met through supply-side solutions such as large dams or inter-basin transfers, or should a serious attempt be made to improve water-use efficiency (recognized as being very low) in irrigated agriculture, get more value out of a given quantum of water, reduce the water-demand, and minimize the need for supply-side projects? In arid or drought-prone areas, is the introduction of irrigated agriculture a good thing to do? Should not 'development' in such areas take other, less water-intensive forms? Is the slogan of 'making the desert bloom' a sound one? Was the Rajasthan Canal project a good idea or a misconceived one? No confident answers to those questions will be attempted here; the point is that these are difficult but important questions that need careful consideration.

Subject to those caveats, the idea of taking water from 'surplus' to 'deficit' basins may seem *prima facie* a good one. That indeed is the principal driving force behind the project. However, there are many serious difficulties with that plausible proposition, which we must take note of.

DOUBTS/RESERVATIONS

Gigantism / Altering Nature

To start with, there is the fundamental objection, not on the technical ground that 'inter-basin transfers' are wrong though that point does need consideration, but to the grandiose nature – the gigantism - of the undertaking. This will be a horrendous intervention in nature, an ambitious attempt to alter nature. That it is to be compressed into a short span of time makes it even more horrendous but that is a secondary point, the main one being that it amounts to nothing less than the redrawing of the geography of the country. Who gave the Government (the politicians, the bureaucrats and technocrats) or even the Supreme Court the right to change the geography of the country? Are they even remotely aware of what they are doing? If we cannot alter the basic structure of the Constitution, can we with impunity alter the basic features of the country? This is a severe case of technological hubris, a return to old-style Prometheanism. One thought that the 19th century philosophy of subduing nature or conquest over nature with the aid of science and technology had been discredited and was a thing of the past, but it seems to have returned with a vengeance.

Criticisms of gigantism are sometimes responded to with the answer that no gigantism is intended; that the project will proceed carefully and slowly, in a piecemeal manner, from the minor and relatively less problematic links to the more difficult and ambitious ones. Is such a careful, exploratory, step-by-step approach in fact intended? This seems inconsistent with what we have been seeing and hearing in recent months: the Supreme

Court's direction that the project be accelerated and the time-frame compressed; the Prime Minister's announcement that the project will be taken up on a war-footing; the setting up of a Task Force; the references to the order of investments involved; the publicity surrounding the project; and so on. It appears that the Government wants to derive political advantage from dramatic announcements, and at the same time claim that it is adopting a slow, careful, modest, exploratory approach!

Bizarre Idea

There is in fact an oddity about the proposition that we have tended not to notice. One can understand if the planners start from an identification of the needs of particular areas, proceed through a consideration of options and alternatives, and finally arrive at a decision to link two or more rivers as the only or the best option in a given case. Instead, the present project *starts* with the proposition that the rivers of India must be linked, and then proceeds to consider possibilities of storages, links, transfers, etc. What is the basis for that *a priori* proposition (even if it is an old one)? How did we arrive at this bizarre idea that all the rivers of India – or the major ones – must be linked? The analogy sometimes put forward with the linking of highways or with a national power grid is inapt and misleading. Human creations or productions such as highways or power can be manipulated by humans. That does not necessarily apply to rivers. Rivers are not human artefacts; they are not pipelines to be cut, turned around, welded and re-joined.

Serious Consequences

The project is potentially fraught with serious consequences. It has been argued that similar projects have been undertaken elsewhere without catastrophic consequences, but that is too facile a statement. Water-resource projects are part of the kind of 'development' that the world has been pursuing, which has in fact had many catastrophic consequences. But leaving that aside and confining ourselves to projects on rivers, it is well-known that old-style planning in the former Soviet Union led to the diversion of two rivers that were flowing into the Aral Sea, resulting in the virtual death of that sea. That is now recognized as a great environmental disaster, perhaps the greatest ever, and desperate attempts are being made to reverse it. With the 'linking of rivers' project we may be headed for other unforeseen disasters and may discover this too late. Is not a degree of caution called for before we embark on this enterprise? (We shall doubtless be accused of timidity and exhorted to look at China which has embarked on the massive Three Gorges Project. That too is madness and the disasters that it will bring will be seen in the future. The opposition to Three Gorges in China is muted because dissent is not easy in that country. Those who are envious of China's ability to 'get things done' must reflect on how far they are prepared to go in emulating that system.)

Cutting Across Basins

As hinted earlier, there is some difficulty with the very idea of 'inter-basin transfers'. These generally involve the carrying of water across the natural barrier between basins (which is what makes them basins) by lifting, or by tunneling through, or by a long circuitous routing around the mountains if such a possibility exists in a given case. Rivers or streams may also have to be crossed in some cases. In addition, big dams, reservoirs and conveyance systems will need to be built. All this may mean heavy capital investments; continuing energy costs (in operation); substantial environmental impacts; and the displacement of large numbers of people and the related problems of rehabilitation.

Such apprehensions have been sought to be allayed with the explanation that the flows will be largely by gravity with lifts (not exceeding 120 metres) at a few selected points, and that the need for a transfer of water through natural barriers will be obviated. Can a number of river systems (basins) be linked largely by gravity with a few modest lifts and some command-area adjustments, obviating the need to cross natural barriers? Perhaps in some cases, but in most or many? That sounds like magic. One would need to look at this very carefully, case by case.

Announcement in Advance of Examination and Clearance

We are told that this is a 'concept' that consists of some twenty or thirty projects. For each project, some small and some big, a proper feasibility study will have to be prepared as an inter-disciplinary exercise, fully internalizing economic, social, sociological, human, environmental and other aspects *ab initio.* Thereafter, the projects will have to be examined and evaluated,

again in an inter-disciplinary manner, and cleared by the appropriate agencies. Thorough Environmental Impact Assessments, Cost-Benefit (multi-criteria) Analyses, qualitative assessments of non-quantifiable considerations, and based on these, rigorous investment appraisals, will need to be undertaken. We do not know what the outcome of that process will be: all projects may be cleared; all may fail; or some may survive a stringent scrutiny while others may not. In advance of that, a judicial direction has been given, a Prime Ministerial announcement has been made, and a Task Force has been set up for studying modalities of implementation. The presumption is that the project or projects will be found acceptable and cleared. Does this not reduce the whole process of examination and clearance to a mere formality, a mockery? With the conclusions already presumed and announced at the highest level, can we really expect the governmental agencies concerned (the CWC, the Technical Advisory Committee, the Ministry of Environment and Forests and its Committees, the Task Force that has now been set up) to undertake a serious and objective examination?

Incidentally, we are told that NWDA has prepared feasibility studies for some five or six links, and that these have been ratified by engineers, sociologists and economists. Where are these studies? How many people outside the Government have seen them? Even within the Government have all the Ministries and agencies concerned seen them? If indeed there are feasibility studies of some of the proposed links, let them be put into the public domain for engineers, geographers, environmentalists, economists, agronomists, soil scientists, sociologists, social anthropologists, financial analysts, and others to examine and offer their comments. This massive undertaking is too important a matter to be left entirely to the internal processes of the Government.

National Commission's Observations

Not very long ago the high-level National Commission for Integrated Water Resources Development Plan (NCIWRDP), the first national commission on water, submitted its Report (September 1999). Its Terms of Reference specifically included 'Inter-Basin Transfers' as an item, but it made no strong recommendations on the subject. It reviewed the NWDA's studies. It did not discuss the proposed Himalayan links in detail because the data are classified as confidential, but did observe that the costs involved and the environmental problems would be enormous; that the further expansion of irrigation in the desert areas of Rajasthan would need examination from all angles; that the NWDA's Himalayan component would require more detailed study; and that the actual implementation was unlikely to be undertaken in the immediate coming decades. On the Peninsular component, after a careful examination of the water balances of the various basins, the Commission observed: "Thus there seems to be no imperative necessity for massive water transfers. The assessed needs of the basins could be met from full development and efficient utilization of intra-basin resources except in the case of Cauvery and Vaigai basins. Therefore, it is felt that limited water transfer from Godavari at Ichampalli and Polavaram towards the south would take care of the deficit in Cauvery and Vaigai basins….Though surplus is available in Mahanadi also, the transfer from that river would require much longer link and is in any case not required for the immediate future…." (The Commission then takes note of some uncertainties that may affect the above judgment and says that further studies as to the future possibilities of inter-basin transfers need to be continued.)

Were those observations of the National Commission taken into consideration by the Government when it decided to embark on this project?

Distortion of Planning Process

It would be interesting to ascertain whether, at the time when the Supreme Court took up the writ petition, there was a project under consideration at all. If the Government had been contemplating a monumental project of this kind, there would have been some indications. There were none. The Ninth Plan made no reference to it. Even the Tenth Plan (which lays special emphasis on water and wishes to be regarded as a Water Plan) refers to many important approaches, policies, programmatic initiatives, and so on, but says nothing about any river-linking project. The Prime Minister's Address to the National Water Resources Council (1 April 2002) did not mention it. It seems clear that the Government were not seriously thinking of any river-linking project. The NWDA's proposals were non-starters. The Supreme Court's ill-considered direction has catapulted this old and non-serious idea into prominence. Thus a project that was not on the anvil has suddenly become the most important

undertaking of the Government**.** This is a distortion of the planning process.

Pre-empting of Resources

That distortion of priorities also means a pre-empting of resources, and a distraction of attention from the things that need to be done. Plan outlays are barely adequate even for the completion of projects already undertaken. One estimate – that of the NCIWRDP - of amounts needed for completing spill-over projects was Rs. 70,000 crores in the Tenth Plan and Rs. 110,000 crores in the Eleventh Plan (Report, 1999). That leaves no scope for new major projects, and necessitates a severe selectivity even in regard to the continuance of what are called 'on-going projects'. From the Sixth Plan onwards the stress has been on consolidation rather than on new starts. Against that background, it seems strange to embark on a major river-linking undertaking. The rough figure mentioned in the Supreme Court in this context was Rs. 560,000 crores! That figure will no doubt go up substantially in the course of actual implementation, but even if we ignore that point, the pre-empting of resources of that magnitude for this project will render the whole planning process meaningless. We may be wasting a good deal of time in pursuing this chimera, and distracting ourselves from finding time and money for more modest, worthwhile and urgent activities, such as extensive water-harvesting all over the country (wherever feasible) and the onerous but important task of rehabilitation of tanks in the South and other similar traditional systems ('dying wisdom') elsewhere. Even more important is effective demand management through improved efficiency and economy in water use, whether in agriculture or in industry or in domestic and municipal uses, so as to minimize the need for supply-side solutions. These ought to be our priorities, but none of this is likely to receive much attention, given the preoccupation with the gigantic river-linking project.

(Incidentally, apart from the pre-empting of resources, the huge costs involved in the linking of rivers and long-distance water transfers will make the water at the receiving end very costly indeed. There is hardly any possibility of recovering even a fraction of those costs from the users, who will doubtless argue that this is infrastructure development and that the state must bear the cost. However, the possibility of private sector investment is also being explored, and the question arises whether the investors will be able (or should be allowed) to charge full commercial prices. There are many difficult issues here. The Enron case comes to mind. However, there is not enough information for a proper discussion of this aspect here.)

Intra-Basin and Inter-Basin

The Constitution talks about inter-State rivers but makes no reference to inter-basin transfers. It neither permits nor prohibits them. There are legal complexities here, which this paper will not go into. It assumes that such transfers can be made only with the consent of the States concerned.

The NWDA's assessment that surpluses are available in Mahanadi and Godavari (accepted by the NCIWRDP) is not shared by the Orissa and Andhra Pradesh Governments. There is irony in the proposition that the answer to the difficulty of persuading Karnataka to release Cauvery waters for Tamil Nadu (a co-riparian State) lies in the even more difficult course of persuading Orissa to spare Mahanadi waters for non-riparian States! There is also considerable opposition to the idea of the eastward diversion of west-flowing rivers. Political difficulty by itself is of course not a clinching argument. Certainly, if a course of action is desirable, we should not allow such difficulties to deter us. The point sought to be made here is slightly different. We have not so far been able to persuade States *within* a basin to share river waters (e.g., the Cauvery Dispute); instead of resolving such *intra-basin* disputes through the better, more economical and more cooperative management of the resources of the basin, should we try to bring water from another and more distant basin? Further, despite some talk of integrated, holistic planning for a basin, the idea has made no headway because of strong resistance from the States. Should we not reach the stage of basin-planning first before talking about inter-basin transfers?

It appears that we are ready to project a shortage in a basin and draw the conclusion that water must be brought from another basin. In reality, the answer to the sharing problem in the Cauvery (for instance) lies in both Tamil Nadu and Karnataka learning to reduce their excessive demands on the waters of the river through a combination of measures: the 'shortage' will then disappear.

Himalayan – Peninsular Links?

It is not very clear whether the Himalayan and Peninsular components in the NWDA's proposals are independent or whether a link between them is envisaged.

We may leave aside the Indus system, from which there seems to be no possibility of transfers, and none seems envisaged. However, a transfer westwards and southwards (direct or indirect) from the Ganga does seem to be contemplated and needs to be looked at. Apart from considerations of techno-economic viability, on which the Ganga-Cauvery link idea was earlier abandoned, the diversion of waters from the Ganga will have international implications. Bangladesh is likely to view this with apprehensions and raise objections. Under the India-Bangladesh Treaty of December 1996 on the sharing of Ganga waters, India has undertaken to protect the flows arriving at Farakka, which is the sharing point. Bangladesh may contend (rightly or wrongly) that a diversion of waters from the Ganga to the southern rivers will not be consistent with that undertaking. Besides, it is a proposition accepted by both India and Bangladesh that the Ganga is water-short in the lean season and needs to be 'augmented', though the two sides have different notions on the means of augmentation: that is a debatable proposition, but if that is in fact true, where is the scope for diversion from the Ganga? India may argue that only the flood flows of the Ganga will be stored and diverted, and that the lean season flows (which are what Bangladesh is concerned with under the Treaty) will not be affected; but Bangladesh would say that if the flood flows can be stored, the stored waters should be used for the augmentation of the lean season flows of the Ganga itself for being shared at Farakka, and not diverted to other basins. Within India, Bihar has already a strong sense of grievance that its interests in respect of the waters of the Ganga system have not been given due consideration; and West Bengal has only reluctantly agreed to the large allocations to Bangladesh under the Ganga Treaty and has been pressing the needs of Calcutta Port. Neither State will look kindly upon any diversion of Ganga waters southwards.

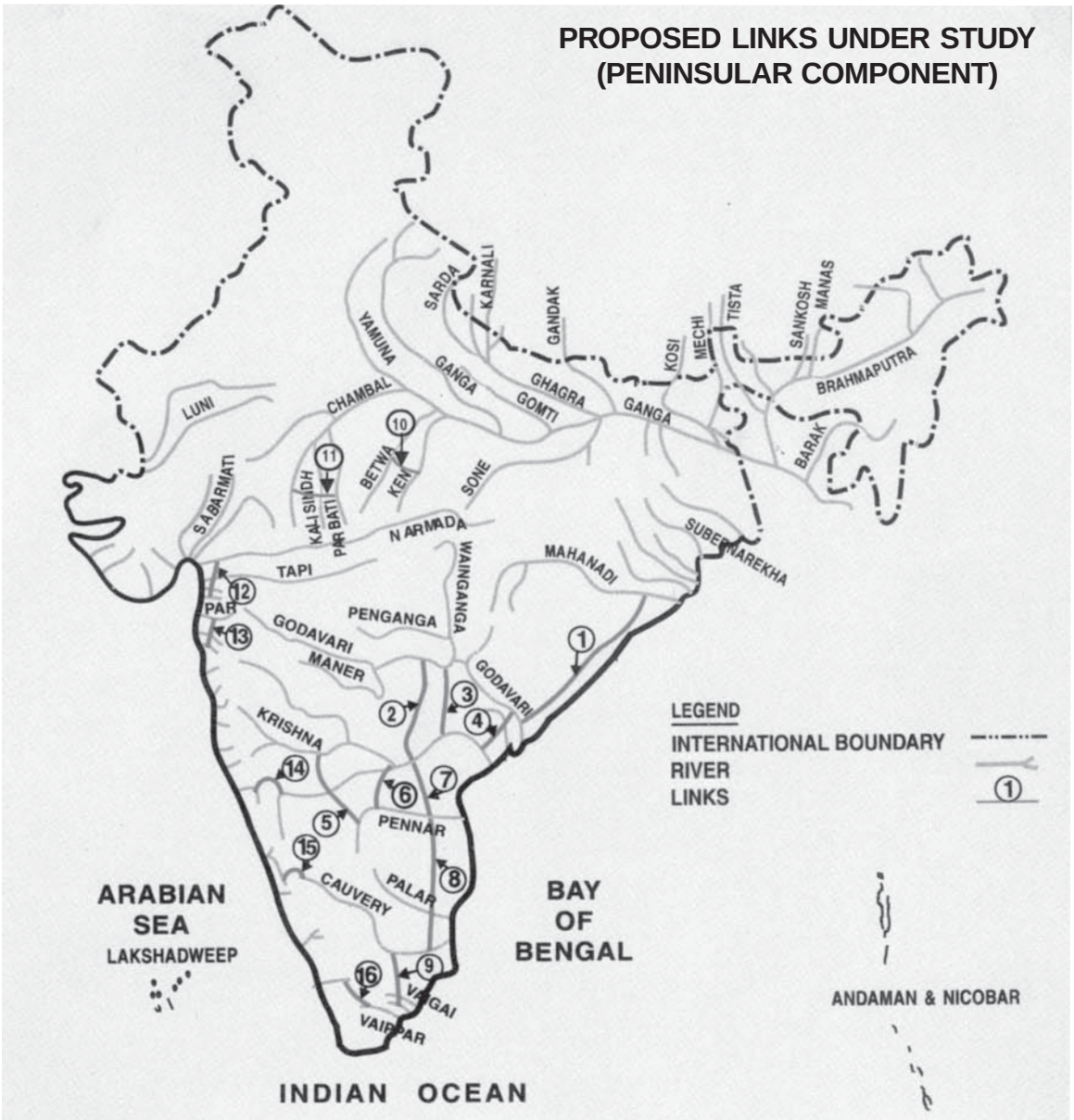
In the preceding paragraph, attention was drawn to the difficulties that would need to be dealt with *if* waters are to be transferred from the Ganga. However, it was recently stated by a senior official of the Ministry of Water Resources that "at no point would waters of the Ganga be transferred to any of the Himalayan or Peninsular rivers." If no transfers are envisaged, there is nothing more to be said. However, speaking subject to correction, the proposals of the NWDA did seem to include some transfers from the Himalayan rivers westwards and southwards. It is that kind of expectation that gives the project its popular appeal, particularly in the south. If such transfers are not in fact intended, the Ministry should make that clear to all.

Conclusion

We must hope that the Task Force set up as directed by the Supreme Court will consider not merely the 'modalities' of the 'linking of rivers' but also all the questions raised above. Any headlong rush in the pursuit of this chimera will be disastrous. Specifically, the following suggestions are placed before the Task Force and the Ministry:

- take people into confidence as to what the Government plans to do; publish a White Paper;
- make the National Commission's Report (1999) as well as the various studies and pre-feasibility and feasibility reports of the NWDA available to the public; hold hearings, invite comments;
- hold consultations with knowledgeable people and institutions outside the Government (economists, engineers, sociologists, agricultural scientists, scholars and institutions concerned with water, agriculture, irrigation, and problems of rain-fed areas or arid zones, management specialists, development studies institutions, NGOs concerned with social mobilization, activists who have been involved in social transformation and in natural-resource management, and so on; consult in particular those who are full of doubts about the project, and pay serious attention to their apprehensions;
- instead of starting from an *a priori* proposition about the linking of rivers, proceed from the water needs of each area, consider all the available options, and choose the best;
- focus on efficient, harmonious, sustainable intra-basin water management first before thinking of importing external water; reach the stage of basin-planning before considering inter-basin transfers;

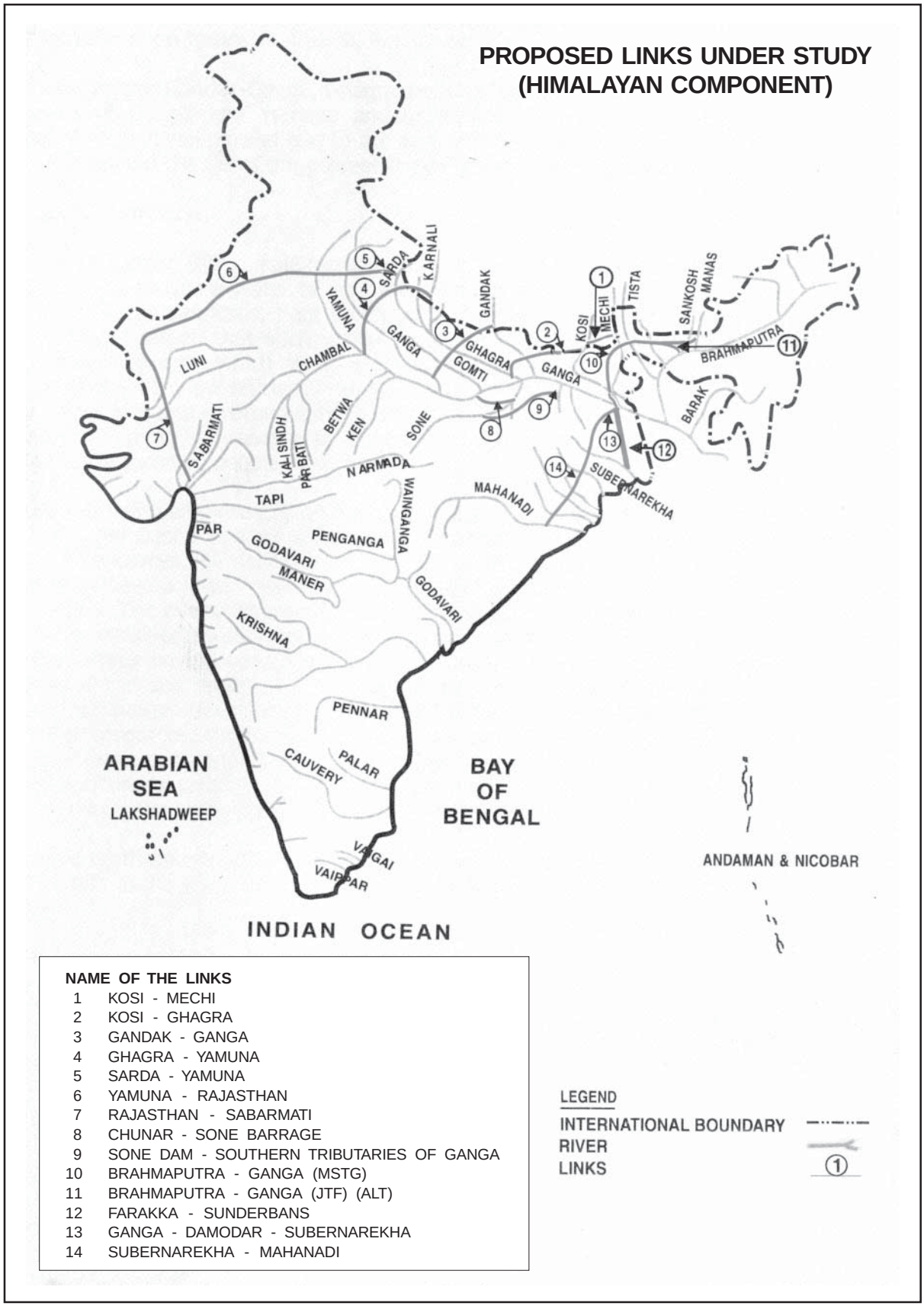
- where a river-linking or long-distance water-transfer proposal seems *prima facie* the best or only option, get a thorough, professional feasibility report prepared in a fully inter-disciplinary manner, internalizing not merely techno-economic but also environmental, human, social, equity, 'gender' and other relevant aspects and concerns, and put it through a comprehensive, inter-disciplinary, rigorous and stringent process of detailed examination, appraisal and approval; let such a project or projects emerge from and be an integral part of the planning process, rather than be foisted on that process and pre-empt attention and resources from other necessary and urgent activities; and
- take up "on a war-footing" (in the Prime Minister's words) a national project of extensive, community-led rainwater-harvesting (wherever feasible) and watershed development, as also of the revival and re-activation of traditional systems of water harvesting, conservation and management (tanks, ahars and pynes, johads, stepwells, etc).



NAME OF THE LINKS

1 MAHANADI (MANIBHADRA) - GODAVARI (DOWLAISWARAM)
2 GODAVARI (INCHAMPALLI) - KRISHNA (NAGARJUNASAGAR)
3 GODAVARI (INCHAMPALLI LOW DAM) - KRISHNA (NAGARJUNASAGAR TAIL POND)
4 GODAVARI (POLAVARAM) - KRISHNA (VIJAYAWADA)
5 KRISHNA (ALMATTI) - PENNAR
6 KRISHNA (SRISAILAM) - PENNAR
7 KRISHNA (NAGARJUNASAGAR) - PENNAR (SOMASILA)
8 PENNAR (SOMASILA) - CAUVERY (GRAND ANICUT)
9 CAUVERY (KATTALAI) - VAIGAI - GUNDAR
10 KEN - BETWA
11 PARBATI - KALISINDH - CHAMBAL
12 PAR - TAPI - NARMADA
13 DAMANGANGA - PINJAL
14 BEDTI - VARDA
15 NETRAVATI - HEMAVATI
16 PAMBA - ACHANKOVIL - VAIPPAR

Source: Fig. 7.4, Pg. 185 from *Report of The National Commission for Integrated Water Resources Development*, *Volume-I*, Ministry of Water Resources, Govt. of India, New Delhi, September 1999,



Source: Fig. 7.5, Pg. 186 from *Report of The National Commission for Integrated Water Resources Development*, *Volume-I*, Ministry of Water Resources, Govt. of India, New Delhi, September 1999,