

**Resolving Water Conflicts: A Review Paper**  
**(Based on Review of Cases of Water Conflicts Documented by the Forum on Policy Dialogue on Water Conflicts in India)<sup>1</sup>**

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**Part I: Introduction**

This research is an assignment undertaken during the short-term internship with the Forum on Policy Dialogue on Water Conflicts in India. It began with a broad objective of identifying and studying the incidences of water conflicts in India wherein the knowledge-based, deliberative processes were attempted for resolution of the conflict. Considering the limitations on the available time and resources, the nature of the output was decided to be in the form of a review paper. Due to the same limitations, it was also decided to restrict this search and review only to the case studies documented by the 'Forum on Policy Dialogue on Water Conflicts in India' (hence-further called the Forum).

However, the initial rapid browsing of the literature indicated that there are only a few instances in the documented case studies, which describe such knowledge-based deliberative processes for conflict resolution.

Based on this observation, then the researcher decided to widen the study to understand the process of conflict resolution, in terms of its different aspects. As many of the case studies did talk about the resolution of the conflicts, it was felt that the documentation would contain adequate information and data on different aspects of the conflict resolution process.

Another round of rapid browsing of the documented case studies indicated that the case studies contain significant amount of discussion on the issue of conflict resolution, though, in most cases, the resolution eluded the stakeholders. Apparently, as a result of this failure to resolve, the case studies were found to be discussing various factors that make conflict resolution difficult. It was also found that, in most of the cases, the efforts for resolution were focused on dealing with the conflict by ameliorating the root causes underlying the conflicts. Depending on the causes underlying the conflicts, these ameliorative efforts primarily involved efforts either to reduce the costs or enhance the benefits, or, in some cases, doing both. As the starting concern of this researcher was the deliberative process, it was also decided to search for lessons from the documentation on the process of stakeholders' dialogue for resolution of water conflicts. This decision was based on the observation that, while many cases studies discuss the possibilities and need of such a dialogue, only a few report attempts made by stakeholders for initiation of such a dialogue.

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<sup>1</sup> This version of paper is based on the case studies of water conflicts presented only in the book 'Water Conflicts in India: A Million Revolts in the Making' edited by K. J. Joy, Biksham Gujja, Suhas Paranjape, Vinod Goud, and Shruti Vispute.

Based on these initial broad observations, the following research questions were evolved.

1. What factors make conflicts more complicated, adversely affecting the possibilities and chances of successful conflict resolution?
2. What are the strategies adopted for amelioration of conflicts, through reduction of costs or enhancement of benefits, or both?
3. What are the main elements of the process dialogue among stakeholders for resolution of conflicts?
4. What are the factors and conditions that would facilitate such a process of dialogue for resolution of water conflicts?

As the research questions indicate, the research is exploratory in nature. The only method adopted for this research is the review of the limited amount of secondary literature. As mentioned before, the decision was made to restrict to the search and review of the documentation prepared by the Forum on the cases of water conflicts in India, in view of the restrictions on time and resources.

This paper presents result of the review exercise conducted with the above-mentioned research questions in mind. The findings are presented in the following three sections. After this first section introducing the paper, the second section discusses various factors affecting the possibilities of resolution of water conflicts. The third section discusses the ameliorative measures adopted in the documented cases as well as various critical points related to such measures. The fourth section tries to present learning and lessons— drawn from the documentation of case studies—about the process of stakeholder dialogue, and, more specifically, about the factors and conditions that would facilitate such a stakeholder dialogue.

It was felt that such research would help to build further knowledge on water conflicts on the foundations of documentation prepared by the Forum. Moreover, it is hoped that the research will also help practical efforts to resolve water conflicts.

## **Part II: Diagnostics: Factors Affecting Resolution of Water Conflicts**

This part of the paper discusses factors that are found to be affecting the process of or efforts for resolution of water conflict. These factors are divided into four main groups: (a) Factors or Characteristics of Conflicts Affecting Resolution, (b) Factors that are Contextual for the Conflicts, (c) Factors related to the Characteristics of Stakeholders in Conflicts, and (d) Factors related to Information and Knowledge about the conflicts. These groups are further divided in subgroups of factors affecting resolution of water conflicts.

## **1. Characteristics of Conflicts Affecting Their Resolution**

The experts developing the case studies have identified some critical aspects of water conflicts, which make the resolution of these conflicts an urgent and pressing challenge. Ramaswamy explains that most water conflicts arise over different usages or uses of water, viz., domestic, municipal, agricultural, industrial, as well as over the consequences of such uses (371). This variety in the underlying causal factors requires that the conflicts caused by different factors need to be treated differently. This makes resolution of these conflicts difficult.

Vaidyanathan tells us that water conflict involve “complex and multi-layered intermeshing of engineering, hydrology, legal and institutional aspects,” which makes their resolution difficult. He adds that “supply and demand conditions . . . changing over time” make conflict resolution more difficult (xv).

There are instances in which the conflicts are episodic, depending on availability or non-availability of water, as in the case of Shapin basin in Jharkhand documented by Lal et al. (299). The episodic nature of conflicts also creates barriers to the efforts for resolution of conflicts as the pressure for resolution wanes episodically, puncturing the tempo of the efforts for resolution.

As pointed out by Joy et al., most water quality conflicts continue to fester for decades (xxiii). This is true also for other types of conflicts. The Dharmasagar Tank case presented by Rao and Murali has seventy years of history of conflict between a city and villages (283). In the case described by Prasad of Ubheshwarji ka Nala, the history of conflict between two villages goes back to 300 years (294).

Joy et al. also underscore the need to urgently resolve the water conflicts by pointing out: “In India, water conflicts are likely to get worse before they begin to be resolved. Till then they pose a significant threat to economic growth, social stability, security, and ecosystem health” (xviii).

### **Costs and Benefits Involved in Conflicts: The Main Bone of Contention**

Most conflicts involve disagreements over sharing of either costs or benefits, or, in some cases, both. The disputes over sharing of costs arise because the costs to stakeholders are found to be very high. These high costs might arise out of new development interventions, sparking the conflict. The ‘highness’ of the costs is relative, and depends on the capability of the stakeholder to bear the costs. Thus the highness is a matter of perception rather than of an objective measure, and, hence, is subjective.

In some cases, the conflicts could be because of the fact that the entire cost burden is levied on one set of stakeholders. There is possibility that the total costs could be shared in different proportions, and the conflict is manifested over disagreement over the proportions of distribution of these costs.

In a similar manner, some conflicts might emerge from skewed distribution of benefits among the stakeholders. The conflicts may arise from accruing of benefits less than the expectations of one set of stakeholders. These benefits might be emerging from some new development interventions. There is also a possibility that the conflict is over skewedness in the current arrangements for sharing the available benefits.

There are many examples in the documented case studies of water conflicts coming out of the disagreements over distribution of costs and benefits. Joy et al. point at the “the vexed question of who pays how much” for the water that the stakeholders are getting or not getting. They argue that the marginalized sections of society always end up paying higher proportion of costs, while the dominant sections get to enjoy higher proportion of benefits (xxvii). Paranjape and Joy echo similar concerns: “who gains, who loses? Is there some kind of parity between those who lose?” (67).

Ramaswamy observes, “[c]onflicts over river waters, whether inter-country or intra-country, seem often to arise in the context of large projects” (369). It is not a coincidence that large projects tend to create not just winners and losers but the winners here win handsomely, while losers end up paying disastrous costs.

Paranjape and Joy provide a different perspective to the issue of sharing of costs by saying, “[t]he issue is how to share shortages?” (67). It is important to note that the water shortages are expected to increase with the advent of climate change, hence, this question acquires critical importance.

Coming to the issue of sharing of benefits, Gujja observes, “Kuttanadu case demonstrates how investments meant to result in benefits for local people can go wrong, benefitting one section over another” (5). He also points out that at the core of the Keoladeo National Park controversy is the issue of sharing of one of the main benefits of the park project, viz., benefits of tourism. These benefits are not shared with the local communities who end up paying costs, by making sacrifices and adjustments for the part project (4).

Ramaswamy raises a deeper issue, “[c]onflicts over water often arise because of claims and counterclaims [about water needs] . . . . [I]n the attempts at conflict resolution, the stated claims are taken in some kind of a compromise is worked out” (374). He further raises the question: “But how much water do the parties in question really need?” (374). He hints that parties do not need the claimed water and they can reduce their water consumption significantly. This would increase the total benefits available, or would reduce the total costs, if project sizes are reduced.

## **2. Contextual Factors Affecting Resolution of Conflicts**

This groups of factors affecting conflict resolution are sub-divided in four sub-groups: (a) Institutional Weaknesses, (b) Techno-economic Factors, (c) Legal Factors, (d) Political Factors.

## **Institutional Weaknesses**

The case studies discussed many instances of institutional weakness that affect the conflicts and their resolution. These weaknesses will have to be addressed while making efforts for resolution of water conflicts.

Joy et al. point at the lack of proper governance framework as one of the root-causes underlying water conflicts by saying, “water conflicts are symptoms of larger issues in water resource governance” (xxvii). In a similar vein, Vaidyanathan points at the institutional weaknesses that lead to water conflicts, “conflicts are logical development in the absence of proper democratic, legal, and administrative mechanisms to handle issues that are at the root of water conflicts” (xviii). Joy et al. also trace the roots of water conflicts to institutional factors, “what is evident is the total lack of effectiveness of the so-called river basin organizations in tackling the water conflicts” (xxviii). Raju argues, “failure of community institutions often leads to conflict around irrigation water” (248). As mentioned before, efforts for conflict resolution will have to take cognizance of these institutional weaknesses.

## **Techno-economic Factors Making Resolution Difficult**

Resolution of water conflicts is made difficult by certain compelling techno-economic factors. Vaidyanathan tells us that resolution of water conflicts is a technically difficult task (xv). Appasamy explains how strong economic and technical imperatives underlie the water conflicts, especially the conflicts over water quality, which are more common where water is scarce. He explains that there are two underlying reasons. First, he points out that industrialization occurs in areas where irrigated agriculture is not practicable due to scarcity of water, which is a very compelling techno-economic logic. The second technical factor is that the effect of pollution is more pronounced in the areas of scarce water, as against in the areas of abundant water where the pollution is diluted due to relatively large quantities of water (138).

## **Legal Factors Making Resolution Difficult**

Appasamy points out that, in most of the cases of the conflicts, the users first protested and later took up the issue in the courts (135). Such judicial intervention makes it difficult to resolve water conflict through other means and methods. Prasad also points out that the legal action by any party “might further entangle an already complicated issues” (297).

Appasamy explains one major legal barrier to resolution of conflicts over water quality. In the Indian legal system, pollution of water is a serious criminal offence. The polluter is seen as a guilty party to be subjected to criminal prosecution. Appasamy points out that, thus, the “concept of conflict resolution [through use of civil law] is virtually absent in the case of water quality conflict”. This legal situation creates resistance to peaceful resolution of these conflicts. Instead, it is suggested that the economic gains created by the polluting actions are to be considered and pollution be treated first as a civil offence, and, only in acute and repeated instances, it should be treated under criminal

proceedings. This opens up possibilities of resolution of conflicts through other means and methods such as environmental mediation (141).

### **Political Factors Affecting Conflict Resolution**

As Ramaswamy states: “[w]ater disputes are inevitably ‘political’ and cannot be removed from the domain of politics” (372). But, Ramaswamy criticizes attempts for ‘politicization’ of the conflicts. He uses the term in a negative manner; what he means by the term is mixing of the politics underlying the water conflict with partisan and electoral politics. He argues that such mixing “bring[s] in adversarial attitude and come[s] in the way of a constructive and cooperative approach” to resolution of conflicts. He further explains the disastrous effects of politicization by citing the example of the Cauvery disputes saying, “politicization not only made Cauvery dispute more difficult, but it also seriously impaired the working of the constitutional conflict resolution mechanism (372).

Another form of the politics or politicization involved in water conflicts is building of coalitions. It is apparent that different social groups or communities, who have grievance against new measures or projects, come together to form informal or, in most cases, formal coalitions. There are umpteen number of examples in the documented case studies of such coalitions, including, for example, Khirau Ghati Sangharsh Vikas Samiti (24). This probably is the result of two factors. First, there is significant level of grassroots-level political activity in most of the Indian states. This, in turn, might be attributed to the present political system, which allows and facilitates such activism as well as the historical legacy of Gandhian style of freedom struggle. Second, these community groups have a role model in the Narmada Bachao Andolan (NBA) and local Samiti’s raised by the Andolan. NBA was successful in attracting nation-wide visibility, in subsequent years, it reached grassroots activists in many states through its national level coalition called NAPM. Patankar and Phadke, however, point out a negative aspect of such a grassroots-level politics, “many social movements start as protest movements with negative connotations. But, if they are to move ahead, they must elaborate their own perspective, forge their own alternatives, and rally large masses of people around such alternatives” (310).

Generally, coalitions involve different stake holding groups having overlapping interest. However, a somewhat different example coalition building is presented in the case study by Lele and Patil wherein the WUA’s were federated together to take concerted action against the government department (106).

Another interesting aspect of politics among stakeholder is brought forward by Suchitra, who points at the tensions between the labor organizations in the toxic industries and the communities affected by pollution by these industries, putting these two local stakeholder groups against each other (148).

### 3. Stakeholders Related Factors Affecting Resolution of Water Conflicts

In this section, factors related to stakeholders are discussed. These include: (a) Diversity among Stakeholders, (b) Lack of Mutual Trust among Stakeholders, (c) Differences in Perspectives of Stakeholders.

#### Diversity among Stakeholders

All the case studies bring out a wide range of diversity among the stakeholders involved in water conflicts, even in the local level or micro-level water conflicts. Such diversity adversely affects chances of resolution of water conflicts. Joy et al. point at “heterogeneity of stakeholders” involved in water conflicts (xxviii). They add, “[w]ater conflicts in India now reach every level and divide every segment of our society” (xvii).

Stakeholders in the GAP study of Kanpur by Singh include stakeholders as diverse as leather industries, a village and state and central government agencies (208). Joy et al. shed light on a frequently witnessed combination of stakeholders in water conflicts. They mention, “[t]he contractor-bureaucrat-politician nexus further complicates the situation and the conflicts very often take the form of conflict between this nexus and the local people” (xxiv).

Suchitra brings out an interesting aspect of this diversity among two sets of local grassroots level primary stakeholders. The first is the farmers and fishermen who are victims of pollution and, the second is industrial laborers working in the polluting factories. In many cases, both the groups come from the same local communities. Their conflicting interests make the local situation more difficult for fast resolution of conflicts (148).

Prakash and Sama provide a good illustration of such a diversity among stakeholders through a detailed ‘Stakeholder Analysis Matrix,’ wherein they not only list the stakeholders but also depict interrelationships among the stakeholders. While some stakeholders have overlap and similarities of interests, the other groups of stakeholders are bound to be in conflict with the first group (40). They explain that such diversity and contradiction in the interest create conflict even seemingly non-controversial issue like getting drinking water for everybody in the village (40).

Appasamy makes an interesting observation in the case of two types of water conflicts. He proposes that intra-sectoral conflicts (e.g., conflicts between different beneficiaries of irrigation) are more common in the conflicts over water quantity. However, most conflicts over quality of water are inter-sectoral, i.e., involving industry and other sectors (such as agriculture or drinking water) (137). These characteristics are important consideration while making efforts for resolution of water conflicts.

Joy et al. provide the diagnosis of such diversity, “[t]he richness and diversity of bio-physical, social, economic, and political contexts in India itself creates a tendency of fragmentation and polarization [of views and among stakeholders] rather than synthesis, leading to long-drawn wars of attrition” (xxviii).

The issue of wide diversity among stakeholders is a critical issue as it creates barriers to the communication and trust among the stakeholders as well as to the co-generation, sharing, and exchange of knowledge among the stakeholders. All these factors significantly affect successful resolution of water conflicts.

**Lack of Mutual Trust among Stakeholders**

The mutual trust within a stakeholder group or among different stakeholder groups is crucial for the dialogue among stakeholders for conflict resolution. Gujja points out that “plain mistrust” among stakeholders is one of the main sources of water conflicts. In support of his point, he gives the example of the Majuli controversy (6). He further explains the point saying, “the present conflict [over Keoladeo National Park] is the culmination of a long history of mistrust between the park and [local] people” (3). Janakarajan, in the study of Palar Basin controversy, mentions “distrust” among the stakeholders (165).

In the similar vein, Prasad points at the prejudices and apprehensions in the minds of stakeholders, which result in “lack of commitment to explore options for common good and reluctance to cooperate with external agencies, which sought to mediate” (297). He points out that, as a result, “dialogue as an option has never been considered” in the Rajasthan controversy (297). Ramaswamy explains how, as a general pattern, the structural contradictions between the upper riparian party and lower riparian party lead to anxieties, mistrust, and conflicts (370).

**Differences in Perspectives of Stakeholders**

It is often found that different stakeholders have different perspectives to view at the issues involved in the conflict. Understanding these differences in perspectives of stakeholders are critical as they create serious barriers to initiation of the dialogue processes.

The case studies documented by the Forum bring out many such perspectives. George and Krishnan describe various perspectives and positions (based on their perspectives) of different stakeholders in the controversy over pollution by Grasim industries (153). They vividly describe how the contradicting interests of various stakeholders make it difficult to resolve the conflicts, unless the stakeholders are ready to reconsider the present utterly skewed distribution of costs (153). The case study of controversy over Brahmaputra Bridge describes similar diversity in perspectives in terms such as “Progress versus Traditional Lifestyles” (52). It was pointed out by Paul and Paul that “[t]he political leadership at the local, state, and national levels seems to have misplaced confidence in technology as the remover of obstacles [to securing adequate water]” (25). In the Jholapuri River Case, the authors mention “diversity of voices” even among “primary stakeholders,” including differences in perceptions of women and men of the same social groups (120).





Appasamy depicts the diversity in a particular context, argues, “[t]he inter-sectoral dimension makes conflict more difficult to resolve. Industries are run by managers and engineers who usually have little common with farmers or fishermen. Often, they may not be from the same area, not even from the same state. It is therefore very difficult to create a common forum for conflict resolution” (137).

Thus, in most cases, there is huge diversity in perspectives and positions of stakeholders involved. Further, in some cases, the perspectives of the stakeholders involved are diametrically opposite. Typically, the agricultural communities, environmental activists support the principles of sustainability, with giving varying emphasis on the equity dimension. Social activists and left-of the center political organizations emphasize the equity dimension, with varying degree of acceptance of the sustainability dimension. Urban and industrial sectors and groups associated with these sectors, along with some mainstream political parties, focus on the growth dimension, often neglecting both, the equity and sustainability dimensions.

Thus, the perspectives held by different stakeholders could be divided in the following four ideal-types, viz., (i) purely ecological perspectives of environmental organizations or ecological experts, (ii) engineering perspective of the official government agencies, (iii) equity or livelihoods perspectives of many activists, (iv) small-scale engineering perspective of some activists.

In view of such diversity in the perspectives of stakeholders, as mentioned in the Introduction of the book, “[t]he challenge is to evolve a consensual framework that will be inclusive enough even as it takes into account crucial. . . . concerns like equity and sustainability” (xxix).



**4 Factors related to Information and Knowledge**

The following are the factors related to information and knowledge about the conflicts that affect resolution of conflicts: (a) Existence of Authentic Data, (b) Access to the Authentic Data, (c) Capability to Analyze and Interpret, (d) Availability of Knowledge and Capabilities.

**Existence of Authentic Data**

There are serious issues regarding the very existence of necessary official/ authentic information and data on various issues involved in water conflicts. As pointed out in one of the case studies, “non-availability of reliable information and data was impediment to serious intervention” (30). Existence of the necessary data with authentic institutions is critical because such data would be the basis of knowledge required for conducting the dialogue process for conflict resolution.

**Access to Authentic Data**

Many a times, though the official / authentic data exist with government or other mainstream agencies, it is not easily available or accessible to some of the stakeholders,

especially the disadvantaged sections of society. The case studies provide many examples of such a situation. In the case of Ithai barrage controversy, the NHPC brought out information brochure, with which the local stakeholders were not happy, so they demanded that the agency should share all the information available (31). Adagale and Pomane also point at the lack of “will, accountability, and transparency in sharing the information” (329). Rawat and Kaintura argue that the private company involved in the micro-hydel project was not transparent in sharing the information (365). Phadke and Patankar also point at the lack of transparency and reluctance in sharing the data on the part government agencies (310). Vaidyanathan also mentions that “information and analysis is seldom made public” (xvi).

An important suggestion in this regard is made by Rawat and Kaintura that government should respect and accept the information and data collected by local community (365).

More interestingly, Vaidyanathan points at one major outcome of the lack of transparency in sharing information and analysis as well as the lack of informed public discussion. According to him, because of these two lacunas, “critics of government policy tend to underestimate the complexity of the problem and its solution” (xvi). This tendency to underestimate the problem and solution gives rise to unattainable expectations and demands, which act as barriers to resolution of conflicts.

In order to be useful, the official data should be made accessible to all stakeholders in timely and adequate manner, through official and formal channels, and using procedures that are mandatory. Existence of such channels and procedures also help develop trust about the official stakeholders facilitating the dialogue process.

### **Analysis and Interpretation Capabilities**

Even if the data is accessible to all stakeholders, many stakeholders face difficulty in understanding or interpreting this data. This is especially true for scientific or technical data. As Vaidyanathan argues, “but, more and better information is not sufficient. It is also necessary to develop the capacity to analyze the information and come up with technically sound alternative solutions” (xvi).

Equally important is the ability to analyze the data to arrive at usable inferences that, then, can be translated by stakeholders in arguments and positions. Lack of analytical capabilities is often the handicap faced by many weak and disadvantaged stakeholders. Such capabilities are necessary to develop the feeling of ownership and credibility about the dialogue processes in the minds of all stakeholders.

### **Availability of Knowledge and Capabilities**

It is rightly argued by Chauhan that “knowledge has to come before any strategy [for addressing the conflict] can be successfully implemented” (20). In the efforts to initiate the multi-stakeholder dialogue in the Jholapuri River Case, there was a significant element of knowledge building on the issues of conflict such as situational analysis, stakeholder analysis, and hydrological survey (119). In the Jholapuri River Case, there

were separate efforts for “capacity-building on conflicts and conflict resolution mechanisms,” the targets for which are the NGO team and community leaders (120).

Vaidyanathan brings in a critical aspect of the knowledge related to water conflicts by saying, “a trans-disciplinary dialogue is necessary because water and water conflicts cannot be fully understood and mechanisms to resolve them cannot be designed within disciplinary boundaries and a coherent, multi-pronged action [is needed] on several inter-related fronts like technological, legal, institutional, and economic” (xix).

Thus, based on the observations from the documented case studies, the abovementioned four factors related to the information and knowledge regarding the conflicts have potential to create barriers to the dialogue process.



**Part III: Ameliorative Measures for Addressing Water Conflicts**

In this part of the paper, we move from the diagnostic factors to the discussion of ameliorative measures to address water conflicts. The discussion in this part also discusses some relevant points pertaining to these ameliorative measures.

**Measures for Reducing Costs and Increasing Benefits**

One remedy to ameliorate the contestation in water conflicts is to reduce the total costs. The total costs (to all stakeholders together) could be reduced by some measures. On the same line, another set of ameliorative measures could help increase benefits that are under contestation.

In the case of controversy over Keoladeo National Park, it is suggested that the river can be revived through measures like catchment afforestation, increasing water movement in the basin, intensive watershed management, and floodplain revival (19). Similarly, in the case of controversy over groundwater depletion in Goa, it is suggested that the water level can be raised by rainwater harvesting, by constructing percolation tanks atop hills, and building check dams in the valley regions (36). Sahasranaman lists alternatives to sand, which would help reduce mining of sand. These include: crushed stone quarry dust, glass powder, fly ash, and some waste material. He proposes that the government policies should actively encourage use of these alternatives (222).

In the case of conflicts over distribution of benefits, increasing the total benefits (or making the pie bigger) would help increase the chances for the dialogue processes. Total benefits could be increased through investment in different measures like ecological conservation as well as training and capability enhancement of cost-bearing communities.

Coming to the ameliorative measure involving increasing the total benefits, there are some examples in the documented case studies. Paranjape and Joy suggest, in the case of Saradar Sarovar Controversy, taking measures to maintain or enhance the benefits while reducing the costs of the project, so that the contending parties would come

around for a negotiated settlement (340). Gujja observes, “[i]mproving water resources through rainwater harvesting, check dams, desilting of dams are good measures, but it is also necessary to reach agreements over who gets what from improved water resources” (6). Patankar and Phadke present a success story of such measures undertaken by the fishing cooperative societies in the Tawa dam in Madhya Pradesh, which have helped provide substantial benefits to local fishing communities. The authors emphasize that, in this case, the genuine people’s control helped to ensure both, productivity as well as sustainability and increase in employment and income of the local communities (311).

In the case of Uchangi dam, Patankar and Phadke describe measures undertaken to reduce submergence and thus reducing the cost and number of PAP or cost-bearing families. The ameliorative measures also involved increasing availability of water (i.e., benefits) through watershed development measures, and equitable distribution of water, increasing number of beneficiaries. All these measures are very helpful in increasing chances of conflict resolution. However, the cost of these measures, especially, the first two would be borne by the state government (311).

### **Bearing Costs of Ameliorative Measures**

It needs to be noted that these ameliorative measures would also bring in some costs of their own. The question is who will bear the costs of these ameliorative measures? If the costs involved in these measures are borne by some stakeholders, then there is an issue of the net costs to the cost-bearing stakeholders after the measures are deployed. If these net costs are lower than the costs without taking the ameliorative measures for these stakeholders, then there are higher chances that these stakeholders would be ready to bear these costs. However, if the costs for these measures are to be borne by the government, then there is kind of externalization of costs.

In the case of conflicts over benefits, total benefits could be increased through injection of external benefits like sharing of costs by other projects or other agencies or soft loans or grants by governments. The writers of the case studies also express similar apprehensions. Gujja mentions, “[i]n the case of Chennai, there are ways of dealing with the problem. . . . The question again is who will pay [for these measures]?” (6). Janakarajan in his case study of the Palar controversy expresses his apprehensions over the extent to which the polluting tannery companies will be ready to bear the cost of restoration of the water bodies (166).

The Haribad case described by Mansuri and Dharmadhikari presents a different possibility in which the beneficiary families bear the costs of compensation to the people paying the costs of the project, as they pledge portions of their lands to create land pool for project affected families (346).

### **Dangers in Adopting Short Term Measures or Soft Options**

Further, in a similar manner, some of the costs could be avoided by externalizing to another location, to another social-group, or to future. This implies that the conflicts are

pushed under carpet by temporary measures. However, there is danger that such externalization may give rise to another conflict in future. This, in effect, does not resolve the conflict, it just pushes it to a future occasion or to some different place. However, such temporary solutions raise the hopes for success of soft options. This makes it difficult for stakeholders to accept the need for realistic but hard choices that are often required for equitable sharing of costs and benefits.

As Raju points out, the alternatives resorted to by the state government to ease the conflict over waters of Dharmasagar tank are inadequate in the long run, until the root cause of the conflict, viz., the role played by the municipality, is squarely addressed (245). Paranjape and Joy point out a similar tactic adopted by the state government in the case of Dalits in Mangaon, where in order to avoid conflict, efforts were made to provide different sources of water for each community. While not resolving the water conflict, it did increase social segregation and tension (71).

#### **Part IV: Stakeholders' Dialogue: Some Critical Aspects and Lessons**

The writers of many case studies argue for the need for dialogue among stakeholders and underscore the importance of such a dialogue. Maitra argues, "peaceful and prolonged negotiations alone can bring about meaningful change in the valley" (31). McKay and Diwakara point at the need for "collective action through user groups and cooperatively managed irrigation systems to complement state regulation" (125). Adagale and Pomane also point at the urgent need for a dialogue among the government agencies involved in dam building, the project beneficiaries, and project affected people (329). Mahanta and Mahanta argue for "a dialogue between the authorities and people" (53). Paranjape and Joy also make "a plea for pause and a dialogue" for resolving Saradar Sarovar issue (343).

Different writers have highlighted different aspects of such a dialogue and brought out different advantages of having the multi-stakeholders' dialogue. For example, Gujja points out that Kuttunadu could well be turned into a win-win project if a dialogue is established between the stakeholders (5). Adagale and Pomane suggest dialogue not only on the conflict but also on the alternative proposals suggested (329). According to Gujja, "dialogue with people is crucial if we are to avoid some costly mistakes" (6). The case study by Lele and Patil of the WUA's in Maharashtra end by suggesting "a dialogue between stakeholders as part of the solution" (108). Jayakumar and Rajagopal argue for participation of all stakeholders in resolution of the conflict (159). McKay and Diwakara point at the need for a "dialogue between farming communities and the state government" to "modify rules and norms created by farmers" and to ensure consideration of equity aspects (125).

Some authors stress on participation and dialogue in the preparatory stages of projects and interventions. Raju argues for participation or involvement of the community at various stages of the project. He points out that such prior involvement would result in a holistic approach to the design and initiation of the scheme. According to him, the absence of such involvement lead to water conflicts (248).

In Jholapuri River Case, the dialogue among stakeholders is seen as helpful for “mobilizing multi-stakeholder conflict resolution platforms” (119). In the study of Palar Basin controversy by Janakarajan, multi-stakeholder dialogue (MSD) approach is seen as having utility especially in “deadlock situation[s]” that demonstrate “deficiency and failure of conventional socio-economic and institutional tools to tackle such situations”. The situation in Palar basin where the MSD was experimented is characterized as having “reached a threshold level of crisis where all institutional and legal mechanisms failed to deliver (including the highest judicial authority), which provides an ideal situation for facilitating dialogue process among stakeholders” (165). A question in this context arises that whether it is a strength of the MSD process that it is useful even in such a bleak situation or is it its limitation that it cannot be used until situation deteriorate to such a level.

### **Instances of Dialogue and Mediation in Documented Cases**

The cases documented by the Forum cite many instances of efforts for mediation and dialogue to resolve water conflicts. The case study by Rajagopal and Jayakumar of Water Users of Bhavani River Basin in Tamil Nadu reports holding of a meeting for multi-stakeholders’ dialogue, wherein it was agreed to continue discussion and “negotiate way out of the touch situation” (76). Suchitra reports that, in the Eloor case, the Local Area Environmental Committee (LAEC) was formed with representatives from the Pollution Control Boars (PCB), industry association, and local environmental group. It undertook environmental audits and made many recommendations. However, it seemed to have little effect on ground situation. Even the presence of Supreme Court’s Monitoring Committee (SCMC) did not improve situation (147).

The case study of Peri-urban Areas of Chennai stands out in terms of its treatment of the issue of the multi-stakeholders dialogue (58). It described success in organizing a dialogue among the stakeholders, despite the competition, bitter conflict, and difficulties in organizing such a dialogue. It provides a list of reasons for organizing such a dialogue. It argues that such a dialogue will force the authorities to explore the alternative ways to secure water as well as force urban water users to adopt water saving technologies (58).

In the international water conflicts involving the country, Ramaswamy mentions that the World Bank was involved in mediation in the Indus Water treaty between India and Pakistan in 1970’s (373).

Janakarajan in study of Palar Basin controversy reports that the MSD Process conducted in the Palar basin had about 120 participants from diverse stake-holding groups including “tannery owners [the polluters], farmers, NGOs, bureaucrats, effluent treatment managers, media persons, lawyers, doctors, and academics” (165).

Jholapuri River Case included efforts for institution building “through the formation of river basin management committee” supported by parallel efforts for strengthening women’s participation (119).

## Frameworks for Conflict Resolution: Normative Framework

In the face of diversity in perspectives of stakeholders described in the previous part of the paper, there is need to evolve a shared normative framework. A similar need to “develop a common framework of resource allocation conflict” is expressed by Das while discussing the Delhi water controversy (63).

The experts writing the case studies offer suggestion on requirement of different types of frameworks as the major prerequisites for successful efforts for resolution of water conflict.

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Joy et al. stress on the need of “acceptable normative framework” (xxviii). Paranjape and Joy explain the essence of such a normative framework, “[t]he core key is to share shortages and surpluses in a principled manner” (72). Citing Rogers and Hall (2002) Joy et al. explain that the normative framework should be inclusive, in both institutional and administrative matters; and it should allow “people with different perspectives and interests [to] practically discuss and agree to cooperate, and coordinate their actions” (xxviii). In other words, “the framework needs to be capable of creating space for dialogue if MSP [Multi-stakeholders Process] is to be initiated” (xxviii).

Paranjape and Joy underscore the need to bring in equity in the normative framework for resolutions of water conflicts by arguing that “the discrimination is fertile ground for conflict” (70). In this regard, they suggest two principles for the new normative framework. The first principle involves providing “access [to water] to every household . . . thereby taking care of locational inequities”, and second, delinking “the supply of water from the about of land held, by providing minimum water to every household irrespective of its [land] holding” (68). They, however, warn, “[e]quity does not come free, it involves cost; and accepting equity is accepting those costs, while not accepting those costs amounts to denying equity” (68). Thus, developing new normative framework will involves “evolving a set of social arrangements incorporating the learning” from traditional practices, but only after removing the vestiges of old “social milieu” inbuilt in the traditional systems like *phad* (68).

Paranjape and Joy suggest adding the livelihoods aspect to the normative framework by brining in the principle of ‘assurance of minimum livelihoods needs and the providing corresponding water requirement as an associate right (72).

Ramaswamy presents some other normative principles for obviating or resolving water conflicts, especially those arising out of competition among different usages and users and consequences of different uses. Though he refers to the trans-boundary conflicts among countries and among the states within a country, the principles have wider relevance. He cites some principles in vogue, such as Harmon doctrine (sovereignty over water flowing through the territory of a country), Prescriptive Rights (rights to historical flows), and the principle of ‘equitable sharing for beneficial use’. He, however, gives higher preference to the principle of ‘equitable and reasonable use.’ He also operationalizes this principle by saying that the upper riparian party, which exercises its

control over the watercourse should not cause any harm or infringe over rights of the lower riparian party. At the same time, the lower riparian party should not be oblivious of the needs and legitimate rights of the upper riparian party and should not try imposing unreasonable restrictions on them (371).

Ramaswamy observes that the understanding between the lower and upper riparian parties based on the principle of 'equitable and reasonable use' will help resolve or obviate conflicts. However, he observes that such an understanding is difficult to evolve especially in India. As a reason, he points at the fact that "rivers here are part of culture, history, and even religion, and tend to evoke strong emotions. . . making rationality difficult" (370).

### **Frameworks for Conflict Resolution: Operational Frameworks**

The experts writing case studies have presented some suggestions for frameworks that are operational in nature. McKay and Diwakara in their study of Groundwater Irrigation in Northern Gujarat suggest a few elements for operational framework such as: property rights over groundwater, tariff for water extraction and use, system for in rotation extraction, and cost-sharing schemes for settling disputes among water users (125).

Authors of the Jholapuri River Case point at the need for "a legislative or regulatory framework" which would establish "rights and give legitimacy to basin level organizations" (121). Appasamy suggests that 'environmental mediation' needs to be integrated in the legal framework governing water quality issues (141). Prasad suggests the need for "a self-regulated, localized framework for action" (297).

Paranjape and Joy provide four useful elements of operational framework, including, delineating share of water for environmental regeneration and recharge, local water harvesting, progressive reduction in water requirement, and water for energy crops (69). This is to be supplemented with two other practice-related norms: (a) synergy between local and external and small and large scales, which is expected to increase the water availability and dependability of sources. (b) accounting for the minimum ecosystem needs and curbing wastage (72).

### **Institutional Settings for Dialogue and Mediation**

The section draws from the discussion on the institutional weaknesses in the previous part of the paper. The case study writers have some specific suggestions about the institutional requirements for conducting the dialogue and resolving conflicts. Vaidyanathan emphasizes on the need of "institutional mechanisms for democratic management [of conflicts] by representatives of all stakeholder and for settlement of disputes and for settlements of disputes" (xvi). Joy et al. point at the crux by saying: "what stands out is lack of mechanisms to mediate, to provide platform for dialogues" (xxv).

The case study writers also have specific suggestions on the institutional and organizational requirements of the dialogue process. Joy et al. elaborate on the



institutional setting needed to avoid or resolve water conflicts, “what is sorely needed is a system of nested institutions that start from the micro-level, may be a village, and proceed upwards to a basin-level board or authority” (xxviii).

More specifically, the authors of case studies have suggestions on the roles for different types of institutions and which institutions should shoulder the responsibility of initiating and conducting the process of dialogue. Mansuri and Dharmadhikary suggest that the dialogue will have to be “initiated by someone who commands the respect and trust of both the parties” (347). Jayakumar and Rajagopal argue for “an external agency [for] organizing dialogues and negotiations through the multi-stakeholders dialogue approach or the formation of multi-stakeholders’ platforms” (159).

Manasi and Deepa suggest that the government agencies should be able to bring together “industrialists [involved in pollution] and the [affected] people on a common platform so that both sides can express their views and initiate a dialogue” (180). Das argues for initiation of dialogue by the state government with affected communities, while suggesting that the issue cannot be resolved unless the all the primarily stakeholders are taken into confidence (131). Appasamy is more emphatic in arguing that sustainability of initiatives like stakeholders’ forum is possible only if government agencies take active interests in it (139).

Appasamy also suggest the role for civil society in the processes for resolving conflict (140). A similar suggestion is echoed by Maitra, “the LDA needs to form a forum comprising representatives from those affected by submergence as well as the state government to spearhead the talks with NHPC” (31). In more than one instances, an NGO seems to have taken the initiative or given the responsibility of forming or facilitating the work of multi-stakeholders platforms and dialogue. Two examples in this regard are the CERD in the case of Bahoor Irrigation Tank issue (264) and VIKSAT in the case of Khari river controversy (204). VIKSAT helped establish a stakeholder forum, while CERD was given the task of establishing democratic Tank Associations, which are considered as the multi-stakeholder platform. McKay and Diwakara suggest a role for local “self-organized groups” to help the state government “to devise some complementary rules with a negotiated approach with the community”. These self-organized groups are seen as having strengths in terms of “well developed social capital” and their familiarity with community action (125).

Appasamy also points at the other alternatives. He recommends use of “services of a [professionally competent and legally legitimate] mediator (individual or institutors) to resolve conflicts” (141). In the Jholapuri River Case, the dialogue process has been supported by research institutions like IWMI and IDPAD (119). Janakarajan points at the need to get support to the Multi-stakeholders’ Committee from government research and other institutions, in terms of government’s recognition, financial support, conducive policies, and access to information (166).

## Key Elements of Procedures for Mediation

The main objectives of the MSD process is defined by Janakarajan as “[t]o bring together various stakeholders for a fruitful dialogue with a view to hear debate, document, and make public their voices”, while the other tasks are listed as: taking stock of situation, assessing the damage due to pollution, identifying defaulters, find ways to prevent further degradation, to find ways to transform the conflict and distrust into “opportunities for mutual aid and cooperation” (165).

In India, there is a separate mechanism of Inter-state Water Dispute Resolution Tribunals for resolving the water conflicts between two states. This is provided through the Inter-State Water Disputes Act (ISWDA) (1956). The tribunal is envisaged as quasi-judicial adjudicatory body. As per the law, the only parties having legal standing in the resolution of the disputes are the state governments of the respective states.

However, in the case of the water disputes other than the inter-state water dispute, the utility of the adjudicatory processes is often questioned as mentioned by Ramaswamy Iyer (374). He accepts the importance of other methods for conflict resolution such as negotiations, conciliation, or mediation. But argues that consideration of adjudication is necessary at least as “a last resort mechanism, . . . [though] adjudication may not be the best way of resolving a dispute” (374). He explains nuances of his view further, “[i]t is often argued that adjudication promotes maximal claims on either side, and becomes an adversarial and divisive process that could indeed happen, but it is not an unavoidable characteristic of adjudication. It should be possible to go through an adjudication process in a non-divisive, non-adversarial spirit. If such a spirit is absent, [even] other routes such as negotiation or reconciliation would also run into difficulties” (374).

For the mediation process, there is always a need for an interlocutor or mediator for sorting out the disagreement among the stakeholders during the dialogue processes. The interlocutor needs to be credible in the eyes of all of the stakeholder groups, so that they would place confidence in her. Similarly, the interlocutor needs to have skills (such as negotiation skills) and capabilities (such as patience), which are required to handle and diffuse crisis-like situations during the dialogue processes. Janakarajan, at the end his case study of one of the rare efforts for multi-stakeholder dialogue (MSD) highlights the importance of such a mediator. He points out, “though the MSD initiative has succeeded in bringing the conflicting parties to the table, the sustainability of the dialogue depends very much on the continued support of an impartial facilitator” (166).

In order to initiate the dialogue processes, an institutional platform will be necessary. The efficacy of dialogue process will be higher if this institutional platform is (adequately) resourceful, credible, reliable, and has mandate (may be official or unofficial) to exert influence over stakeholders. If such a platform exists or if there is potential for emergence/ development of such a platform, then there will be fewer barriers to the dialogue process.

## Major Lessons from Case Studies for the Dialogue Process

There are some important lessons that emerge from the experiences of dialogue processes documented in a few case studies. Beginning with the strengths and weaknesses of the dialogue process, in the Jholapuri River Case, the local NGO team found that the dialogue process is useful for “understanding the multi-dimensional nature of conflicts and [for] mobilizing stakeholders”. However, the need is also realized for social action in parallel with the dialogue process. The social action is envisaged in terms of building structures and accessing government programs for “conflict transformation and livelihoods security” (121).

Rawat and Kaintura present some preconditions for peaceful negotiations. They point at the need to take community into confidence, avoiding coercive action against community by government, listen to local people, and share in the benefits to local people (365).

Gujja brings in another important prerequisite for the dialogue among stakeholder, viz., the mutual respect among the stakeholders. In the case of Keoladeo National Park conflict, he argues: “The solution involves not just water, but also how the park management system establishes a dialogue based on mutual respect with the people in the area” (4).

In support of the dialogue process, McKay and Diwakara report willingness of farmers from Northern Gujarat “to participate in meetings to devise the rules and norms” (125).

In the actual proceedings of the meeting for MSD, Janakarajan reports that the proceedings underwent transformation through stages, starting from “quite intense” arguments from stakeholders in “impassioned and lively” manner. The next stage was acknowledgement of each other’s viewpoints and concerns, creating grounds for emergence of “common points of understanding”. The third stage was discussion of “remedial measures”; and the fourth stage was formation of the multi-stakeholders’ committee of representatives of all stake-holding groups to conduct dialogue in detailed and continuous manner. In the fifth stage, the committee through deliberations, arrived at immediate steps to arrest further deterioration as well as at the agreement to share information and to explore potential solutions (165, 166).

In the discussion over water conflicts, there is tendency to harbor high expectations from community practices and traditional systems. Such suggestions of giving primacy to local communities and traditional systems in conflict resolution efforts are punctured by examples of conflicts in the documented case studies. These examples show that the exclusionary tendencies and insensitivities of local communities (that are often fragmented) give rise to water conflicts. Such tendencies are described in cases from across the country, including from the states of Rajasthan, Maharashtra, Karnataka, and AP. The dominance of the economically and powerful sections of communities are often at the root of water conflicts as shown in cases involving Lingayats in Karnataka (xxv) or Kunabis in Maharashtra (327). In the case of Ubheshwarji ka Nala, Joy et al. comment, “this case helps lay to rest any romantic notion of community and shows that, left to

themselves, 'communities' may sustain rather than resolve their fights over very long periods" (xxv). The study of the *phad* system also shows that the old phads were not adopting efficient or equitable way of water sharing (91).

### **Conclusion**

The limitations of the paper are well evident. The scope and depth of the discussion in the paper is limited, as it was developed in limited time and with limited resources. It is suggested that further research could be conducted on the basis of this research in two ways. First, it may be possible to approach the writers of the case studies or the stakeholders involved in the conflicts covered in the case studies, in order to gain more and recent information on the conflicts and their resolution. This can be used to update and broaden the discussion in this paper. It is also possible to broaden the scope of the literature to be reviewed for this purpose, covering academic, policy, and grey literature from different sources. This would further broaden and deepen the discussion presented in this paper.

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