

# Towards AMCDRR 2018: Ulaanbaatar



## 2018 AMCDRR

2018 ASIAN MINISTERIAL CONFERENCE ON DISASTER RISK REDUCTION (AMCDRR)

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# The Second Avatārana of Ganga: Air, Water and Block Chain

In Indian mythology, it is believed that Ganga had descended from the heavens (an act known as *avatarana*) to save humans from a major calamity at the time. Ganga's rejuvenation plan is a fortuitous second coming; we may well call this the second *avatarana* of Ganga.

In this second coming Ganga not only is burdened with cleaning the water but also the air. While this may seem to be an insurmountable challenge, there is a silver lining to this dark cloud as the source of both unclean water and unclean air is the same. In fact most of India's problems can be tied to a single thread- the decision making methods and processes in Indian institutions.

**To proceed one must ask an ontological question, that is, what is 'decision making'?**

As a reader you may be a little surprised at this question, you may well think that is it not the correct forum for it. You are right, but think again what are the two central aspects to the Ganga rejuvenation plan and what is the obstacle to them. Aviral Dhara (continuous flow) and Nirmal Dhara (unpolluted flow) are the central aspects of the Ganga rejuvenation plan; these aspects involve decision making involving multiple actors and disciplines and there is a complete lack of a decision making framework under the circumstances (involving multiple actors and disciplines). This is true for the air pollution problem as well, multiple states and multiple actors, a problem of 'coordinated' decision

making. We have added the word coordinated to specify the type of decision making with multiple institutions and actors. This is also in line with the ontological question we had asked earlier.

Therefore having set up a basis to discuss what is coordinated 'decision making' in multiple actors situations it is opportune to delve into it.

**There are three types of Decision Making paradigms suitable to our discussions on multiple actors seeking to coordinate and they are:**

**1. Precautionary Principle:** more a principle than a process; this is used specially in the realms of global governance. Climate Change is an issue where this is actively used. The principle is used to decide that only those economic activities be allowed which will not put the global ecological system into jeopardy otherwise humanity as we know may not exist in future.

**2. Robust Decision Making:** These are decision making processes that cull out long term viable solutions from multiple angles involving multiple actors and disciplines. Decision making in National and sub-national governance issues will fall in this category. River basin and air quality management mostly will come here.

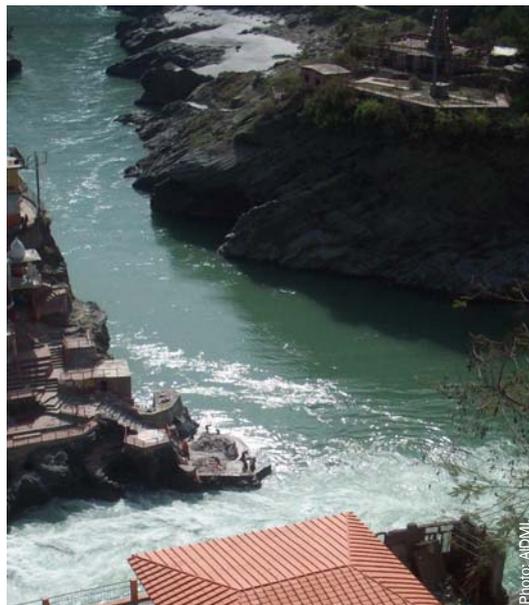
**3. Optimal Decision Making:** These processes are mostly at departmental or firm levels. The internal rate of return (IRR) are tools used here. Projects are evaluated using the processes and tools in this space.

**What are the roles of these decision making processes in river basin or air quality management:**

We have written that river basin/ air quality management is mostly about robust decision making, 'mostly' because it does involve the other two decision processes as well.

**1. Precautionary Principle** will forbid us from doing too many man-made interventions in the basin or to disrupt the flow completely as the ecological system may change which may lead to heavy harm for the community dependant on the river system. Using this principle banning diesel vehicles is a good outcome and diesel exhaust is a category one carcinogen.

**2. Robust decision making:** the most important decision-making aspect/process for river basin/air quality management. This is where options will be developed which are Pareto optimal. For instance making the river pollutant less will



involve changes in the processes in industry, agriculture and even municipalities. Creating an option which cleans the river without much adversity to agriculture, industry and urban life is a challenge. It is surprising that there are several win-win situations when we create a framework for robust decision making. One such framework is 3i - 'Inform Inspire Implement'. 3i is explained below.

3. **Optimal decision making** will be used by firms and departments mostly in structuring PPPs, the modern hybrid PPPs used for sewage management is a result of innovation in this sphere.
- 3i. **'Inform Inspire Implement': a framework for coordinated decision making among multiple actors and/or institutions:** Decision making tools or processes in optimal decision making paradigms are well known. Most of them are tuned to the concept of time value of money and maximize returns on investments. In the paradigm of robust decision making, tools are not well known or even understood correctly. This is possibly the weakest link for river basin/air quality management in India as well. It is appropriate therefore to expand on this with an example of a tool/framework in robust decision making. The framework we are zeroing in on is - 3i or the 'Inform Inspire Implement' framework as we call it in Resilience Relations.

A river basin/air quality management institution or authority can use the 3i process to address a problem in three phases: (1) an information-gathering phase, (2) an inventory of solutions/options formation phase and (3) an implementation phase. In this way,

the authority can maintain up to date data on specific relevant risks, can work with the various people and can bring in international, national or local thought leaders to develop tailored and robust strategies for river basin management. Moreover, the authority can use 3i to build a team of people who can execute and monitor projects on the ground with the help of national and international expertise.

There are various sub processes and attributes in 3i, but there is one attribute worth highlighting here. In 3i, there is a separation between information gathering to implementation phase, with something we call the inspire stage. This is where decision making becomes truly inclusive and robust. In the inspire stage we are aware of the various information sets from various actors, and given that to every identified issue or problem the inspire phase culls out a set of solutions or plausible options. These options will be circulated around various relevant stakeholders, and only when there is a sizeable agreement or near consensus will a selected option be implemented. Finally, what 3i does is that it channels information flows between various actors efficiently, which paves way for effective decision making and implementation of solutions which are environmentally valid, financially feasible, culturally suitable and socially acceptable.

Now for some good news, 3i is being implemented for the last several years by the authors and a start-up called Resilience Relations using offline methods engulfed conceptually by a multi-stakeholder ontological approach using 3i and named as Resilience Centres. Each Resilience Centre takes ownership or jurisdiction (for the want of a better world) of a neighbourhood in an urban location to instil social and

ecological resilience to the neighbourhood community. Functional prototypes are available or being made available continuously even as this article is being written across Delhi NCR and few other cities.

To enhance the performance of the Resilience Centres - the entire 3i approach is available online via a mobile application called Seen Ab; whose working is based on User Experience and follows a iterated and multi-stakeholder design approach. Ultimately each Resilience Centre, and the online platform, Seen Ab is essentially a platform for robust decision making which calls for distributed and decentralized institutions. Networks using Block chain (which is a continuously growing list of records, called blocks, which are linked and secured using cryptography) also have a similar motivation. Resilience centres and Seen Ab will be entertained with the block chain concept with a platform called "Ganesh". A white paper on "Ganesh" is now available.

In this article we have asked an ontological question and have only so slightly articulated a framework to assess a part of our own question. In the end, we would like to sum up by saying that while there is enough scientific knowledge, there is a need for knowledge in institutional processes including decision making processes. We would like to take this opportunity to advocate that all relevant personnel entrusted with decision making in the Ganga basin be appraised of the decision making paradigms and thereby policy makers and other crucial stakeholders take robust decisions; and make the second *avatarana* of the Ganga timeless. ■

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