Influencing Water Policy in Goa

Pathways of Change | 2017

TANDEM RESEARCH

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Influencing Water Policy in Goa:

Pathways Of Change

Tandem Research 2017

PREAMBLE

Tandem Research in partnership with the Asia Foundation organized a Policy Lab on Water Governance in Goa, on 3 & 4 April 2017. The aim of the lab was to identify and understand 'pathways of change' for influencing water policies in Goa. Drawing on conversations at the lab, specific insights for influencing water governance in Goa have been captured in this report. A conceptual and methodological framework that could be used to interrogate water governance in other geographies in India has also been outlined.

Tandem Policy Lab brings together multiple stakeholders for collaborative and iterative public policy solutions. The policy lab method seeks to collectively evaluate the political, social, and value-based contestation underlying the framing of problems, goals, and solutions, to identify pathways for shared sense-making and collective action.

The Goa Water Policy Lab brought together fifteen participants from Goa and elsewhere, representing a diversity of stakeholders engaged in water governance. The lab examined state-level processes in water governance, posing three diagnostic questions across four themes.

Diagnostic Questions

Who are the actors that shape water governance and what is their relative influence?

How do certain framings and ideas win over others - can examples tell stories?

What are the processes through which policy is deliberated and decided?

Four Themes

Water Sharing: Inter-state water sharing arrangements and disputes.

Water Allocation Politics: Politics and policies around competing and increasing water demands for industrial, agricultural, tourism, navigation and livelihood use.

Water Decentralization: Participation of user-groups (e.g. farmer associations), citizen groups, local governments and Panchayats to support decentralized decision-making, and manage water commons in villages.

Water Resilience: Policies for building resilience to impacts of climate change; changes in precipitation patterns, sea level rise and salt-water intrusion in rivers and aquifers.

Policy Lab: A sandbox for facilitating hands -on, iterative sense-making for policy research and experimentation.

01

WATER CHALLENGES IN GOA

While Goa is perceived to be water abundant it faces complex water challenges. Goa has nine rivers, six of which originate and flow into the sea within Goa.[1] There are pending inter-state disputes with Karnataka and Maharashtra over water sharing. Goa is one of the most rapidly developing states, experiencing rapid and largely unplanned development in many sectors, including tourism. Groundwater is over-exploited, particularly around mining areas and along the coastal belt. All rivers, for upto 20-40 km in the state are saline.[2] While Goa does not suffer from acute shortages and variability seen in states like Rajasthan, water demand in the future in Goa will not keep up with the supply, particularly in the context of the growing tourist industry and its impacts on the nature and speed of urbanization. Even though Goa is situated in a high-precipitation zone, it has one of the lowest per capita freshwater availability, and some areas frequently experience water scarcity.

Water Sharing

A major issue in Goa's water politics is its dispute with the state of Karnataka over the diversion of the river Mandovi. The roots of the dispute can be traced back 30 years to when the Central government intervened to negotiate the sharing of water between Maharashtra, Goa and Karnataka.[3] However, the dispute escalated in 2002, when Karnataka, without consulting Goa, approached the Ministry of Water Resources and asked to divert 7.56 TMC (thousand million cubic feet) of water from the Mhadei basin to the Malaprabha basin.[4] Karnataka plans to build 12 dams on the river and its tributaries, claiming that the water diversion is required for supplying basic drinking water to water scarce regions.[5] Opponents of this plan argued that irrigation, especially to water-guzzling sugarcane plantations was the main purpose for the diversion.[6] The Mhadei Water Dispute Tribunal was subsequently established in 2010.[7] Despite the ruling of the Tribunal that water should not be diverted from the Mhadei river until the dispute has been settled, in May 2017, it was discovered that Karnataka resumed work on one of the canals on the Mhadei river basin near Kankumbi, in Karnataka.[8]

Although the water has not been harnessed yet, Karnataka plans to use the diverted water in some of the central districts where there is a dire water shortage. The view held by Karnataka is that water from the Mandovi that is being emptied into the sea is 'excess', and could be put to a more productive

	River Basin in Goa	Basin Area in Sq Kms	% of basin area of Tapi to Tandri
01	Terekhol	71.00	0.13
02	Chapora	255.00	0.46
03	Baga	50.00	0.09
04	Mandovi	1580.00	2.82
05	Zuari	973.00	1.74
06	Sal	301.00	0.53
07	Saleri	149.00	0.27
08	Talpona	233.00	0.42
09	Galjibag	90.00	0.16
	Total	3702.00	6.62

Goa Draft Water Policy 2017

use if the canal is built.[9] Goa strongly contests this view for two reasons. The first is related to the water requirements for the fragile ecosystem of the Western Ghats, where the Mandovi enters Goa. A diversion of water would negatively affect the bio-diversity of the region.[10] The second reason is related to the salinity of Goa's river system. Fifty two kilometers (km) of the seventy six km length of the Mandovi in Goa lie in the saline zone - if there is no freshwater in the river, the salt water will intrude further upstream and disrupt water availability in drinking water wells as well as irrigation.[11] Not only irrigation, but the ability of the river to produce prawns, lobsters and other kinds of fish could also be affected.[12] According to the Mahadayi Bachao Abhiyan, the possibility of the spread of diseases and epidemics will also increase as a result of the salinity. After the Tribunal provided an interim order in favour of Goa, and rejected Karnataka's demand for river diversion, Karnataka made a plea in the Supreme Court to intervene in the dispute, which was rejected in January of this year.[13] The tribunal is yet to reach a final decision and the dispute is on-going.

Vishwanath S, Director Biome Environmental Solutions

Water Allocation Politics

Policies related to water use within Goa also need to be updated. The state has enacted two acts: the Goa Irrigation Act, 1973 which deals with regulation of surface water for irrigation purposes, and the Ground Water Regulation Act, 2002 which deals with groundwater resource management. These Acts have schemes for providing subsidies and/or financial assistance to people and groups who build traditional and modern water conservation structures. However, they have not been amended to reflect the current, more demanding realities of increased pressure on surface water due to a rise in demand for water for irrigation, expanding tourism and real estate development and mining.

The draft Goa State Water Policy proposes a hierarchy of needs for water allocation. It recognises that while water is necessary for agriculture, hydropower, recreation, industry and navigation, priority should be given to ensuring availability of potable water to all households in the state.[14] The next priority would be to allocate water for ecological needs of the river – water needed for sustaining a healthy ecosystem. However, there is a stark contrast between what the state water policy pledges to do, and what is happening at the ground level, especially when it comes to mining.

Minning is a major industry in Goa – the mining belt extends across 95 km out of the 105 km North to South Goa stretch.[15] Majority of the mines use groundwater for washing ore and other activities; of the 105 mines that were operating in 2011, 60% of them were conducting their mining activities below the groundwater level, thereby damaging the groundwater aquifers.[16] Furthermore, according to research conducted by Dr. Sengupta of the National Institute of Oceanography, 70000 cu tons of iron particulates get deposited in river Mandovi every year leading to the river getting heavily silted.[17] There has been brazen illegal mining activity in the ecologically fragile Western Ghats in Goa. The Goa state government also increased the mining quota for thirty mines in Goa and 53% of the 441 new sand mining permits were issued to miners located in the Mandovi basin.[18] The Goa Government has also been issued a third notification by the Ministry for Environment and Forests for designating 60,000 sq km area in the Western ghats as ecologically sensitive based on the report of a high-level working-group.[19] However, the government has rejected the findings and recommendations of the report, in order to keep commercial and development related activities going.

Tourism also takes a heavy toll on water resources as hotels use a lot more water than average residents. Thirty seven percent of the hotels use groundwater while twenty five percent buy water from tankers (who also get most of their water from wells), thereby increasing the strain on groundwater.[20] The industrial sector accounts for 11.3 per cent of the total water supplied by the PWD.[21] Many industries supplement this supply from dug wells or bore wells. This has

led to a number of disputes with local communities. Farmers have resorted to extracting large amounts of groundwater for irrigation; the demand for irrigated water has increased while availability is constant.

Water Decentralization

Goa has a history of using traditional watershed management systems to ensure availability of fresh water and manage water salinity levels and availability of freshwater. Khazan lands, reclaimed lands in Goa used to protect agricultural fields and villages from strong tides using bunds, sluice gates and poims, were managed by Communidades, the unit of village governance in Goa during the Portuguese rule.[22] Some communidades are still functioning, although khazan lands are under threat from prawn farming, river pollution and real estate development. Because of a decline in village level institutions and the old social order, traditional water management infrastructure – sluice gates, embankments and dykes - is not maintained, which leads to a rise in salinity levels in local water bodies. Traditionally, hillside ponds, called tollems, were built to impound rainwater. These tollems provide water for drinking and other purposes and keep the wells full and the hill streams functioning even in the dry seasons. Sacred tanks known as devachi tali were also used as water conservation mechanisms and people used them as small-scale irrigation systems for their plantations. While there are more than 200 of these tanks, they have now mostly fallen into disrepair.[23]

Water Resilience

The impacts of climate change could include: changes in precipitation patterns; sea level rise and increased frequency of coastal extreme events. For example, a rise in sea level around the Goa coast of even 0.5 meter would result in salt water intrusion further into the rivers and coastal aquifers rendering the lands uncultivable and the water undrinkable.[24] According to reports from the Indian Meteorological Department, the geographic orientation of Goa results in peculiar weather patterns. The change in rain patterns (35% above normal rain in 2016), along with rapid urbanisation, could cause water-logging and flooding.[25]

Sustainable multiple use of water resources will be a key challenge in Goa. Competing and increasing demand for water for industrial, agriculture, navigation and livelihood use and likely climate impacts on water, create a complex, unpredictable and dynamic system. Policies need to account for not just complex but also dynamic and changing socio-ecological systems; accordingly, adaptive approaches are urgently needed. Yet centralized planning cultures and a dominance of technocratic policy processes restrict the possibilities for adaptive water use decision-making, that can foster technological innovation, meet competing demands, and build community resilience to potential climatic changes.

02

A THEORY OF POLICY CHANGE

Policy labs are intended to uncover the social aspects of decision-making. The emphasis is on uncovering the different frames through which actors define and diagnose a particular problem, the underlying beliefs and worldviews. The approach facilitates the discovery of pathways of change, based on particular rationalities, and specific to particular solidarities.

Rationalist theories see politics as a bargain between rational unitary actors, with a fixed set of interests and goals, defined by calculations of material gain.[26] The assumptions underpinning such rationalist models however are being increasingly challenged by theoriticians and practioners alike. What an actor or group of actors percieves to be rational for example, is deeply intertwined and directed by the world views and beliefs systems of social organizations.[27] Moreover, the interests of actors are neither pre-defined nor static; rather they are constitued and re-constituted through social interaction. Accordingly, goals are undefined and changeable. Collective action is is often motivated by loyalty to certain beliefs and actors, and cataylzed through persuasion and the articulation of shared meaning and understandings.

Policy change is far from a linear process, which starts with the identification of goals and ends with the implementation of agreed upon solutions. Neither does policy making always follow a rational model of reasoning, in which decisions are made by a systematic evaluation of alternative options to achieve goals. Rather, the framing of problems and the identification of goals is itself deeply contested; the conflict is in fact ideological and definitional, based on values and interests, rather than statements of fact. Policy implementation is accordingly an on-going and iterative process of negotiation and appropriation. Progressive policy change requires the crafting of shared meaning and narrative across multiple stakeholders, and is rarely a result of a top-down directive alone.

Policymaking is better represented as a form of political reasoning and cultural bargaining over values, beliefs, and goals. In a political reasoning paradigm, the problem is a 'strategic representation of situations' that are invoked to promote a favoured outcome or course of action. Rather than a solution that can 'fix' a problem and achieve the stated goal, solutions are on-going strategies for structuring relationships and coordinating behaviour to achieve collective purposes.[28]

Mandakini Surie, Asia Foundation

03

POLICY ACTORS AND THEIR POLITICS

Numerous and diverse groupings of actors shape water policy and management in Goa. One such typology, discussed at the policy lab, disaggregates relevant actors as policy shakers, policy shapers, policy makers, private initiators, and excluded voices. Workshop participants reviewed this typology, adding details of specific actors corresponding to actor type (see image overleaf). Based on this exercise and discussions that followed, we identified relevant groupings or coalitions of actors most relevant for water governance in Goa. We also sought to identify the 'mindsets' that shape their diagnosis of the problems and prescription of solutions.[29]

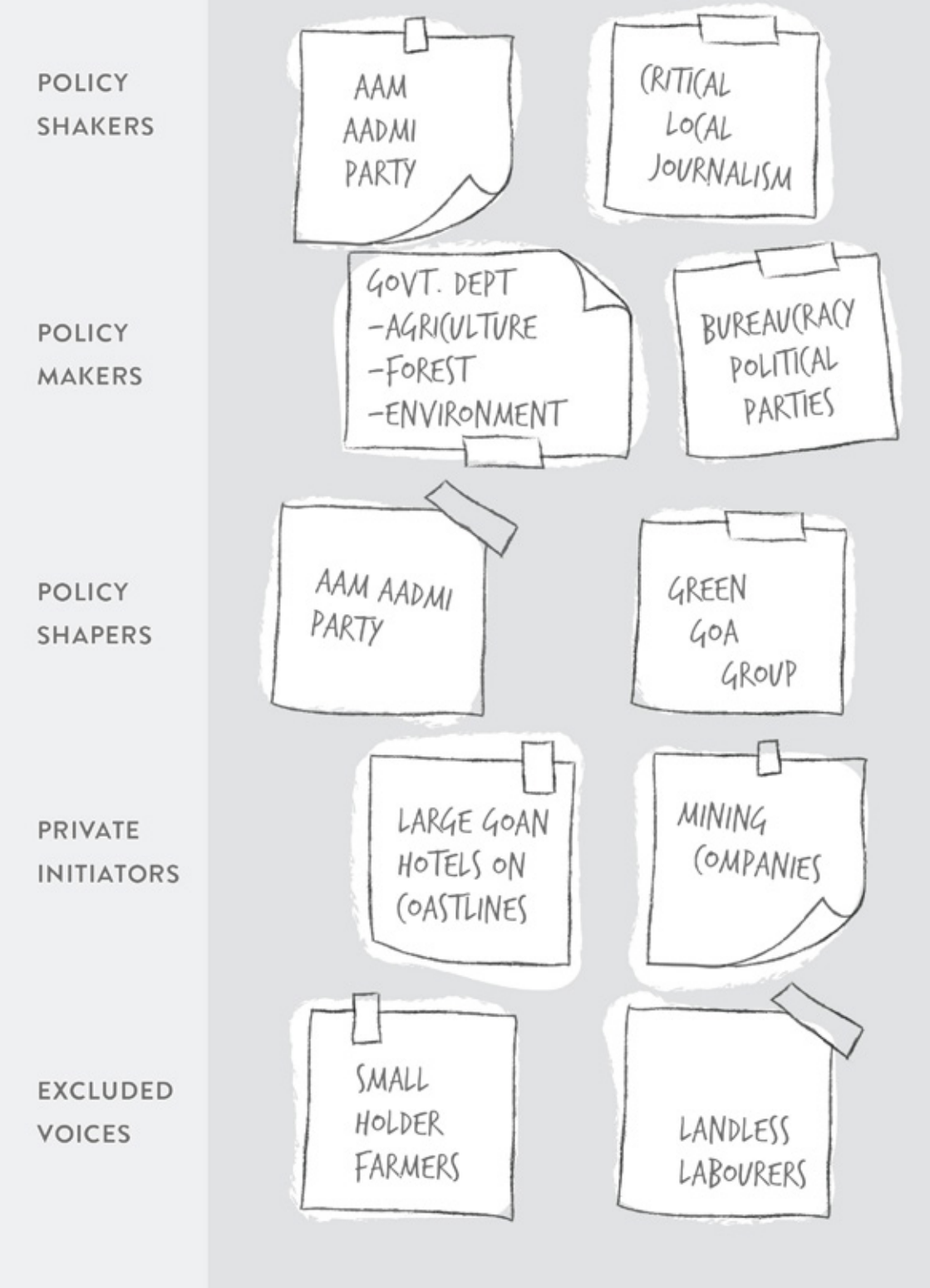
Government

It goes without saying that the state and central governments are the primary policy makers for water policy. In the context of sharing rivers across state boundaries, there is tension between the agency of Central, State and local government. Solving and enforcing decisions around water disputes between states is therefore difficult. While water is a State subject, Articles 56 and 262 in the Union list give parliament the right to regulate and develop inter-state rivers and river valleys.[30] In terms of intra-state water politics, the Goa government tends to focus on issues related to water rights for the river Mandovi. Little has been done to address pollution in the Sal river.

State government departments – agriculture, forestry, tourism etc., also operate in silos, and lack mechanisms for information sharing and coordination of water policies across departments. The government seems unduly focussed on managing water supply through centralized systems of water, even while it is primarily dependent on ground water and open wells. The government has also performed poorly on initiatives around water conservation in watersheds and also traditional water management systems in villages.

Civil society actors also complain of rampant corruption in the water sector. Funds allocated for water projects are misused. Policies are often enacted in favour of actors who wield economic and political power. It is well known that tanker mafias – private suppliers of water to water scarce areas - work in collusion with the water department.

The 'mindset' of the government displays a distinct bias towards command and control of water systems through rules and regulations and though a heavy focus on the development of 'infrastructure' for water supply. The approach is narrow and technocratic rather than systemic. Demand side


POLICY SHAKERS
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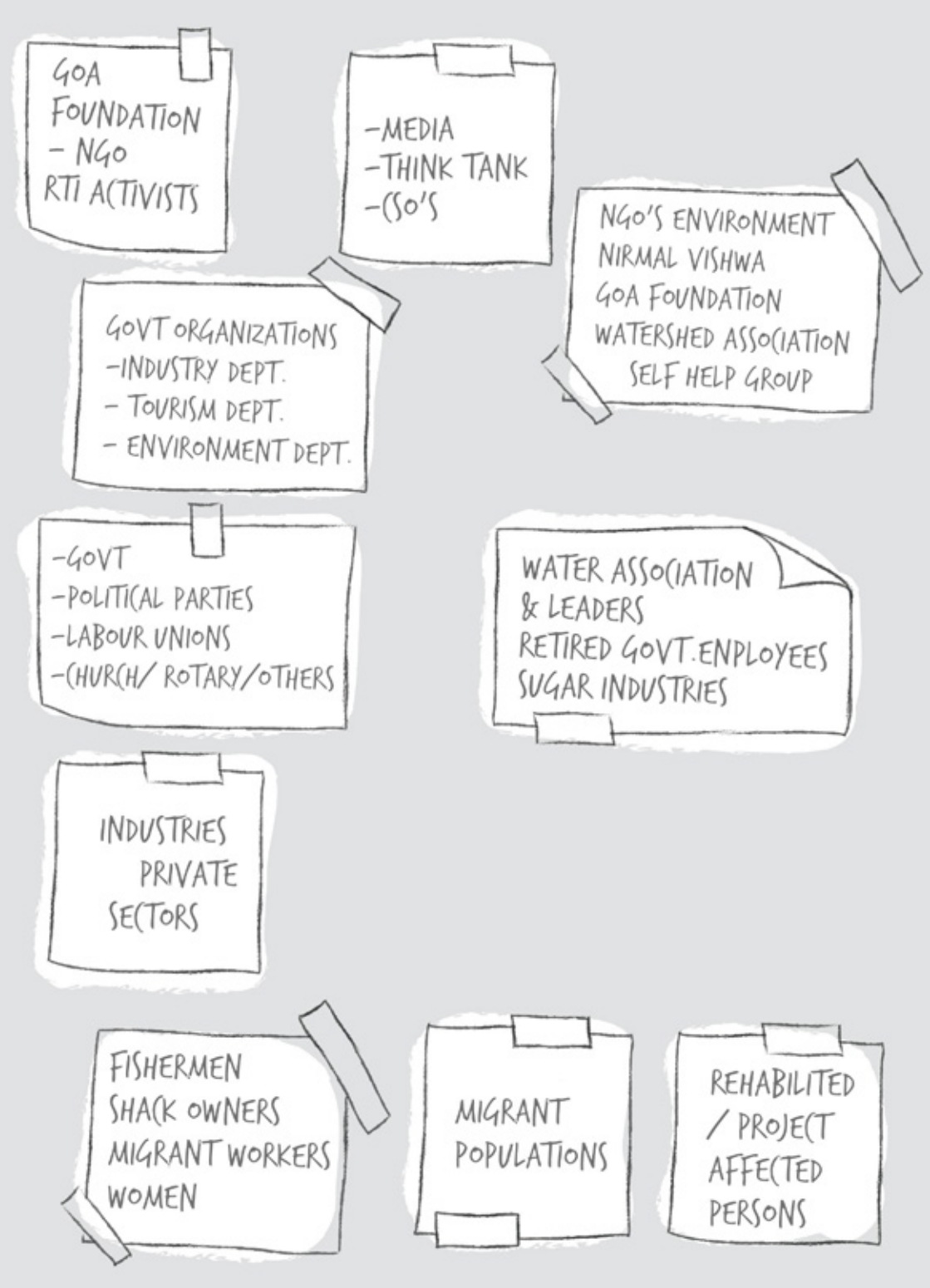
CRITICAL LOCAL JOURNALISM
POLICY MAKERS
GOVT. DEPT -AGRICULTURE -FOREST -ENVIRONMENT
BUREAUCRACY POLITICAL PARTIES
POLICY SHAPERS
AAM AADMI PARTY
GREEN GOA GROUP
PRIVATE INITIATORS
LARGE GOAN HOTELS ON COASTLINES
MINING COMPANIES
EXCLUDED VOICES
SMALL HOLDER FARMERS
LANDLESS LABOURERS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-CSO'S
NGO'S ENVIRONMENT
NIRMAL VISHWA
GOA FOUNDATION
WATERSHED ASSOCIATION
SELF HELP GROUP
GOVT ORGANIZATIONS
-INDUSTRY DEPT.
- TOURISM DEPT.
- ENVIRONMENT DEPT.
-GOVT
-POLITICAL PARTIES
-LABOUR UNIONS
-CHURCH/ ROTARY/OTHERS
WATER ASSOCIATION
& LEADERS
RETIRED GOVT.ENPLOYEES
SUGAR INDUSTRIES
INDUSTRIES
PRIVATE
SECTORS
FISHERMEN
SHACK OWNERS
MIGRANT WORKERS
WOMEN
MIGRANT
POPULATIONS
REHABILITED
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PERSONS

management and management of the water cycle in watersheds receives scant attention. While government actors acknowledge the scarcity and challenges around water, they believe that these are best managed by having enough valves, pipes and regulations to manage the hydrological flow; lack of these levers of control is seen as the main challenge for sustainable water use.

Private Sector

The powerful nexus between business owners, industry and politics is clearly visible in Goa. Private sector corporations and industries, particularly in the mining and tourism sectors, are very influential drivers of decisions made by the government. The tourism industry, for example consumes enormous quantities of water - while luxury hotels and spas enjoy a continuous supply of water, and boast large swimming pools and golf courses, water for residential and small-scale use is in short supply. The tourism industry in fact causes a change in population dynamics, and therefore water usage and allocation, in Goa – a state of approximately 15 lakh people receiving an influx of around 40-50 lakh tourists per year.[31] Pollution and over-extraction of groundwater sources by the private sector is adding to the already existing strain on publicly supplied centralised water systems. Large corporate hotel chains regularly flout coastal zone regulations, but the Goa government tends to turn a blind eye.

Private sector actors are 'blind' towards the issue of water scarcity, now or in the future. They believe that water is an abundant resource. They are wary of over regulation by the government (which becomes a way for extracting bribes when regulations are flaunted) or the 'scare mongering' of the civil society actors around climate change, ecosystem collapse and appropriation of the rights of communities and dolphins. They seek to influence water policies by forming coalitions/industry associations to influence policy makers and/or establishing relationships of patronage with powerful government actors.

NGOs

There is a proliferation of non-governmental organizations engaging with environmental and development issues in Goa. Many of these are local to Goa; others are national NGOs with Goa chapters, and 'ecological refugees' from Indian metros, where the environmental battle has been largely lost. Their main policy concern is the depletion of water resources; they attribute water problems to the appropriation and overuse by the private sector, its greed, and corruption within the government. They aim to not only change policies, but also bring about broader societal reform, based on a platform of rights and justice.

Organisations like Terra Conscious work with local eco-conscious partners to build a culture of responsible tourism by providing ethical and sustainable wildlife and nature experiences. They train tourist boat operators to be vigilant

and report violations of wildlife tourism guidelines and build awareness. This is in addition to rallying with other sustainable ventures to influence officials in the Tourism Department. Wild Otters, another organisation that focuses on otter conservation in Goa, conducts habitat preservation work through awareness building in schools and digital documentation of otters.

Citizen groups and grass root community organizations

Local football associations, church groups, watershed associations and self-help groups also play a role in the management of local water resources. Private sector firms and political parties understand the importance of these groups and try to keep them in good favour by sponsoring their football tournaments or providing them with funding for their everyday activities. If these user groups rally together, they could fulfil the roles of policy shapers.

In the past, the Cauvery water-disputes experienced a decade of calm as a result of farmer-to-farmer negotiations between the two states. These negotiations were organised by civil society organisations, and proved to be more effective at reaching a solution than state negotiations or the formation of water tribunals. There is scope to negotiate water sharing conflicts before the tribunal formation but in that case, civil society organisations need to be the implementing agencies of the government. However, the current state structure is not built in a way that can facilitate such solutions that give control to people using the water.

Effective grass root community organizations in Goa usually centre on the agency of a few concerned and 'exceptional' individuals who seek to mobilize the otherwise apathetic citizens and households in the village. Several such individuals attended the water policy lab. While these actors are unable to sustain long terms strategies for policy influence, they have the ability to mobilize action and engagement around specific 'violations' of water rights and norms or during Panchayat and state level elections. They are concerned about the violation of citizens rights to water by the government, private sector and tourism.

Scientific experts and policy advisors

Academics, researchers and experts in matters related to water have differing takes on resolution of water-sharing disputes or the rate of acceleration of climate change. Some believe that water-disputes must be solved by involving the final stakeholders i.e grass root-level groups. Others believe that such an approach is too simplistic and primacy must be given to the decision made by the tribunal. However, these experts do agree on certain key issues such as the need to renew existing watershed management techniques in Goa, the need for better data to make water policy related decisions, the need for connecting state departments, and the need to build resilience through

institutional linking and coordination arrangements.

The chief characteristic of the mindsets of the experts is the belief that they don't have a mindset. They see themselves as neutral, bipartisan and 'objective' facilitators of policy change. They seek to change policies by the provision of knowledge and data. In practice, due to the dominance of technical and engineering sciences rather than the social sciences, engineering perspectives on the flow of water tend to dominate their input into water policy and this aligns with the more technocratic approaches of the government. This is however changing as more social scientists and ecologists engage with water policy issues in Goa.

Each of these groups of actors privilege and practice different approaches to water governance. The government plays the role of the regulator and technocrat, prioritizing a hydrological approach to water governance, seeking to manage and control resources based on data and expertise. The private sector, primarily the tourism and mining industries, sees water use in term of its economic and productive value, based on a short to medium term calculation of material gain. Issue based NGOs view issues around water in terms of broader values of social justice, rights and conservation; in contrast, grass root level movements and community organizations engage with water governance through community awareness and mobilization initiatives, to promote solutions at the individual, household, and village level. Finally, experts privilege the role of knowledge and data, and emphasize the necessity of building resilience through institutional arrangements. These differing framings reveal the diversity of rationalities and solidarities that characterise actors engaged with water policy and management in Goa. On the one hand, these differences complicate collective action; yet, they also create possibilities for exploring multiple pathways of change, which can lead to progressive change in water policy in Goa.

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04

PATHWAYS OF CHANGE

Policy pathways are routes of influence with the potential to directly or indirectly change policies and affect the behaviour of policy makers and policy-making bodies. Pathways are about deliberative practices: bargaining and contestation among policy actors with different rationalities. Pathways suggest a process for policy engagement that not only focuses on formal policy outcomes – concrete impact on legislation and regulation - but also considers the diversity of impacts on water governance, including changes in behaviour of water institutions, increased awareness and learning among actors and improved transparency and democratic accountability.

The pathways approach is distinct from more linear approach to policy analysis that identifies different stages of the policy process, starting with agenda-setting and ending with implementation and evaluation.[32] A pathways approach also recognizes path dependency of policy outcomes and helps avoid lock-in into narrow policy processes.

Plural worldviews of diverse actors shape their assumptions or beliefs about how policies change; these are their theories of change. We have mapped distinct theories of change that emerged in the Goa Water Policy Lab on to theories grounded in diverse disciplines to identify six pathways of change.

i) Water Balance: Science Drives Policy (or at least ought to)

A range of actors in Goa, experts and technocrats of various hues, argued that more and better scientific knowledge will (or should) drive water policies. In policy studies, the work of Peter Haas[33] credits the emergence of an epistemic community – a community of experts – as playing a critical role in shaping the behaviour of policy makers and actors within policy process. The theory of change implicit in Haas's work is that science drives policy or at least ought to.

For some scientific experts, convergence on 'hydrological data' is likely to drive consensus on water policies and resolution of water related disputes. The primary concern of these actors is sustainable multiple use of water and 'water balance' among competing water demand; their assumption is that water managers and policy makers will make the right decisions by drawing on and picking out good science and rigorous hydrological data. Experts who serve as advisors in formal policy processes, for example in relation to the inter-state dispute over sharing water of the Mandovi river were concerned that

there are only two river water gauges for data collection in Goa. Without adequate data, making estimates of river flows and quantities is impossible, which makes the job for water dispute tribunals that much harder.

Unavailability of data is exacerbated by the unreliability of data that is available. In the absence of monitoring stations, the incentive to 'fudge facts' is high. The central issue in the Mandovi water dispute is Karnataka's plan to build canals upstream to divert water away from the Mandovi to water scarce parts of Karnataka. If diversion canals are built, in the absence of adequate flow data, there will be no basis for measuring the quantity of water that is diverted or information to produce plans for minimizing wastage of water.

Others argue that paradigmatic shifts in ways water flows are classified, studied and measured could also lead to shifts in ways in which different institutions interact and collaborate. A shift from a conventional approach of 'arithmetic hydrology' that view water flows in isolation, as a system of pipes and tubes, to "ecosystem-hydrology" could lead to greater institutional and policy co-ordination among departments and institutions that deal with water, agriculture, fisheries, forestry and regional planning. Ecosystem based epistemologies and systems thinking would lead to integrated management of lakes, rivers, wells, aquivers and coastal waters. More scientific research is also seen as critical for resolving uncertainties, and to formulate policies and programs to adapt to the potential impacts of climate change on sea level, river salinization and rainfall variability.[34]

Data is also seen as having a democratic agency. Data in the hands of communities can help them interrogate water policies and make livelihood and farming decisions. For example, simple information on expected rainfall patterns shared by Indian Meteorological Department with farmers could help farmers with crop planning. The Watershed Organisation Trust in Pune, for example, provides information to drought-prone areas in Maharashtra. Data in watersheds can also be recorded by communities. In Tamil Nadu, local interest groups like the fisherman community have been trained in the measurement of water levels. These are not precise measurements but provide some data points.

Good data could help support co-operation among states on water resource management. The Coastal Salinity Prevention Cell in Gujarat could help Goa, not just by providing information, but also by conducting studies and research in the state. Karnataka also has the Karnataka State Natural Disaster Monitoring Centre that tracks and commissions studies relating to climate change. The development of expert scientific institutions in Goa to conduct research, collect data and advice decision makers would pave the way for progressive policy change.

ii) High Water Politics: Setting agenda through policy windows

Actors with strong political agency use their ability to set the agenda by identifying 'policy windows'. Policy windows are opportunities where influence could be leveraged to push for policy change in situations when public and political attention is focussed on particular critical water issues. For example, in Goa new political players like the Aam Aadmi Party (AAP) seek these windows of opportunity to establish their identity and politics. The implicit theory of change is that policies change through political influence and ability to recognize moments where certain ideas are likely to receive public and political attention.[35]

The agenda setting theory is associated with the work of political scientist John Kingdon who has argued that policies can be changed at moments when policy actors and advocates are able to link problems and politics.[36] Problems refer to the process by which certain urgent and critical conditions or situations are brought to the notice of policy makers. Politics refer to those political factors that influence agendas like changes in elected officials, the political climate, and voices of interest groups and advocates.

In the context of water policy, the urgent and critical problems include scarcity of water in certain regions of Goa, especially in the summer months, corruption in government departments across the rungs, water tanker mafias, and the inter-state water dispute with Karnataka over the Mandovi river. The Goa State Water Policy draft was an attempt by the state to deal with some of these problems. The critique and discussion of the water policy draft by the AAP is an attempt to link the problems with the politics. The recent local and state elections created a political climate to bring public attention to critical issues. While AAP did focus on campaigning on water issues, they failed to win a single seat in the recent Goa elections.[37]

The Goa Tourism Master Plan prepared by KPMG for the state government includes proposals for large golf courses, marinas and beach clubs, which if implemented, would overburden Goa's already fragile water ecosystem.[38] This plan could be interrogated strategically. However, stakeholder engagement has been weak – attendance in consultative sessions organized around on the Master Plan by the Government was very poor. The promulgation of a new Master Plan could have led to the creation of a policy window to address the impact of unsustainable tourism policies. However, because of a lack of engagement from interest groups, this opportunity was missed. Policy windows don't emerge organically – they require committed and connected policy actors to generate the right political climate, through media advocacy, public demonstrations and coalition building with people's groups, researchers and other advocacy coalitions.

iii) Grass-root Water Innovation: Policy change through the diffusion of new ideas and technologies

A set of policy actors believe that water policies and governance will change through the 'diffusion' of innovation, new ideas, technologies and practices among citizens. Social change occurs when new ideas are diffused and adopted. Introduction of an innovation ultimately changes behaviour of citizens and makes them more aware and engaged. Agents of change - local leaders, informal groups or grass-root organizations are central to this theory of change. In recent years information communication technologies (ICTs) often play a central role in this pathway of change.

Diffusion in sociology is the process by which elements of culture spread from one social group to another, thereby acting as a process for social change.[39] These innovations could take the form of an idea, a policy, a product, or even a practice. Innovations are more likely to be adopted if they are easy to use, and if they are perceived as superior to what they seek to replace. Communication of the innovation amongst members of groups affects the rate at which the innovation is adopted and change happens when a critical mass accepts the idea or innovation.

People centred design of tools and strategies are central to spread new ideas. A number of organisations like Jalyatra already have whatsapp groups where water related information is shared. Ideas need not be new. Reviving traditional technologies of water management and dying wisdom about traditional water conservation practices and re-energizing decentralized water access networks could also bring about social change. Information can be spread at the grass-root level about maintenance of wells and water harvesting through word of mouth and also through sharing photos and videos on mediums like whatsapp.

In more urban areas, the use of smart water metres is useful as very often, people are unaware of how much water they use and misuse. The spread of technologies similar to smart meters could create awareness about excessive usage habits and support the more judicious use of water. Some farmers have now switched to sprinkler and drip irrigation and can control these mechanisms remotely as well. The key is to empower the right people with the right technology to bring about behavioural changes.

While ICTs – smart phones and mobile apps often figure prominently in these change processes, exclusive reliance on these can exclude social groups who don't have access to them. In Goa, while smart phone usage is high, network connectivity is low in more remote areas. In such situations, traditional methods of information dissemination, like storytelling and one on one conversation can also be effective.

Goa Water Policy Lab, April 2017

Several stakeholders at the policy lab were concerned about the issue of privacy that surrounds the use of digital technologies. While whatsapp is a very popular medium, it is owned by Facebook, and these companies are known to store data on its users, which they can sell. A solution would be to use independent platforms that are essentially versions of applications like whatsapp and Facebook where end-user groups and communities own the data. Other organisations like Digital Green provide tools through which rural communities can create and share videos of best practices that are locally relevant. However, very few ready-made solutions exist for water; technology will need to be customised.

iv) Water, People and Power: Policy Change through people power

Grassroots community organizers believe that change can be brought about if people join together and take action. This theory, developed from Saul Alinsky, conceptualizes power as something that exists when people cooperate with each other.[40] Therefore, the theory implies that power cannot be in the hands of a 'political elite'. Efforts to change policy should reflect the wishes of the people who are being directly impacted by the problem, not the wishes of one or two powerful people. Once public support is generated at a large scale, the theory of change implies that power is shifted into the hands of these communities. Thus, in order to change policy, efforts must be made towards capacity building, mobilizing communities and building awareness.

Organizations like Jalyatra in Goa work on awareness building by taking volunteers on "water walks", to understand where their water comes from, how water used to be harvested in the past, and the current situation. The problem with applying the grassroot theory of change to an organisation like Jalyatra is that its reach is small, and unless efforts are made for community outreach, its bargaining power with policymakers will be small. They need to engage the apathetic citizen, which is not an easy task. As long as citizens get their water supply from the centrally distributed system, it is very hard to organise them into action or engage them in meaningful discussions about water conservation. A participatory media approach, like that adopted by Video Volunteers[41] could also be effective in getting more people involved. Their citizen journalism model facilitates hyper-local reporting by people who have a direct stake in the management of the issue at hand.

A number of participants noted that such collective action by citizens would only take place if they had a direct sense of water scarcity, and were aware of the average water consumption levels. Rallying church groups, village football clubs, temple associations and citizen groups can also generate awareness. A number of villages in Goa have watershed associations, but they are not active; these already existing associations must be rejuvenated and expanded.

For most people, water - or the lack of it – instigates an emotive, not scientific, response. Using religious leaders to speak to their followers about improved water management can help push messages to new audiences. Targeting already existing associations and communities can help NGOs and activist groups like Jalyatra organise and generate awareness amongst larger groups.

v) Water Advocacy Coalitions: Policy Change Through Advocacy

Coalition or Advocacy theory says that policy change will happen when individuals and organisations with similar policy core beliefs band together and operate in a coordinated manner.[42] For example, groups that promote preservation of wildlife like Wild Otters or sustainable tourism like Terra Conscious, with shared beliefs around conservation and ecological preservation could potentially band together to interrogate unsustainable development around water infrastructure.[43] They will need to identify and reach out to similar groups who also share their core policy beliefs around ecological sustainability. In Goa the coalitions of actors maintaining the status quo are private corporations, larger hotels, and smaller banded interest groups related to the tourism industry. Policy is unlikely to change in this case, unless these private sector corporations and hotel chains are no longer in favour e.g. politicians and bureaucrats. The state listens selectively, and tends to favour private sector actors over the advocacy groups; the tourism groups bring in revenue to the state, whereas voices within advocacy coalitions often tend to diverge or become fragmented.

The other mechanism through which policies can be changed is by appealing to a hierarchically superior jursidiction.[44] This would involve filing cases in courts when officials in power ignore issues such as CRZ violations. It is also possible for the coalition groups to try and engage directly with these private corporations, to change their beliefs through empirical data and research.

vi) Water Power, Elites: Policy change by engaging power elites

The power politics or power elites theory proposes there is a small group of people who control a very large percentage of power in society; the ability to influence policy lies in the hands of these power elites.[45] These people might be those in government and politics, who are directly involved in framing policy; they might also be individuals who are not directly involved in decision-making, but whose expertise in these matters is valued, or whose disapproval is feared.

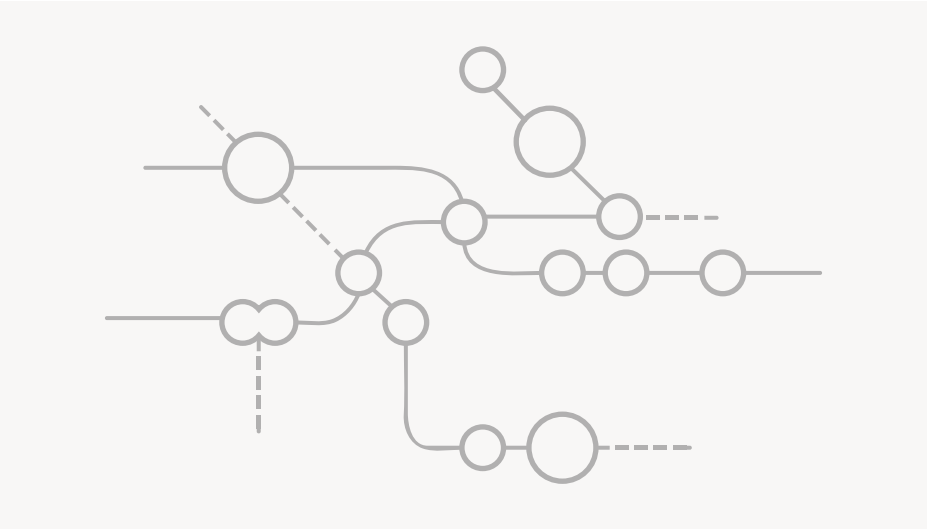
The private sector has a substantial hold on policy and decision-making in Goa. According to the power politics pathway, these are the stakeholders to influence and align with when policy

opportunities emerge. There is a strong nexus between the private sector and politics, not just in relation to tourism, but mining and construction sectors as well. Building a relationship with these sources of influence and opening a channel of communication between the power elites in Goa is critical to achieving policy change.

05

A FRAMEWORK FOR POLICY CHANGE

Water policies will evolve along multiple interacting pathways of change. Based on this policy lab, we identified six such pathways that can contribute to policy change. Each pathway is partially 'true' and plural pathways can potentially help us navigate in the right direction.[46] All pathways are thus relevant and important, and should be pursued simultaneously. This will foster the institutional diversity necessary for progressive and resilient water



governance in Goa. Some pathways however are more durable, and therefore necessary, even if not always sufficient alone.

In Goa, at present, the nexus between government, both at the state and local levels, and private sector actors seem to be driving policy decisions around the allocation and management of water resources. Grass-root level organisations are playing an active role in promoting water awareness and conservation among communities, and ideological and issue-based NGOs and advocacy organisations are mounting a campaign against tourism and mining policies, on a platform of social justice and conservation.

The power politics pathway implies these private sector actors – the power elites - are the stakeholders to influence and align with when policy opportunities emerge. Yet, there has been little success on this front, with many believing that the nexus between government and private sector is increasingly unshakeable, as Goa is being taken over by a particular vision of development and urbanization. Grassroots movements are critical, but are often contingent on the agency of particular individual entrepreneurs. Advocacy politics play a vital role in issue framing and issue linkage, but are also susceptible to fragmentation, often due to a break down in shared values or priorities. Policy windows provide important opportunities for change, and the small size of the Goan state can facilitate quick community mobilization.

In the long run, a sustainable and progressive pathway for policy change must be tethered in knowledge and data, that is supported by institutional diversity. Data must be democratic and participatory, and institutional diversity is created through fostering multiple pathways of change.

These pathways also provide conceptual and methodological insights that can be applied across issue areas and geographies. In Goa, as in elsewhere, these pathways will operate over different time frames, as they foreground and prioritize different dimensions of the complex socio-ecological water resource system. A policy-window pathway is by definition irregular but potentially effective; advocacy coalitions similarly will tend to be particularly effective around specific events, but fragment over time. Yet, both are critical avenues through which expert knowledge can be introduced to the policy process and public discourse. Particular groupings of actors will tend to pursue pathways in line with their rationalities and worldviews. Grassroot level organisations, for example, will aim to diffuse new ideas and practices at the community level while advocacy coalitions will seek policy windows to catalyse change. Thinking about policy processes as pathways of change, lead by different coalitions of actors with different worldviews, can help create a discursive space for policy contestation and clarify strategies for the respective actors.

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