

TOWARDS A POLICY FOR RIVERINE ISLANDS IN THE GANGA RIVER

ISSUES AND RECOMMENDATIONS



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Towards A Policy For Riverine Islands In The Ganga River

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EXECUTIVE SUMMARY

The issue of river conservation is gaining urgency in recent times in India. However, despite considerable efforts in this field, riverine islands and sandbars have, until now, received negligible attention from subject experts and policymakers. This is evident from the gross lack of studies on this topic and the absence of any significant policy/regulation addressing pressing issues faced by these vital components of the riverine ecosystem.

In recent years riverine islands have begun to face anthropogenic pressures to the extent that some are hosting major built settlements. Most major rivers in India including River Ganga not only support numerous habitats and exemplary biodiversity but also serve as sources of several key ecosystem services. However, the increasing human colonization within and around the riverine ecosystems has overwhelmed the islands and led to the loss of their native biodiversity vis-à-vis increasing concretization and agricultural activities.

The lack of studies regarding these islands as well as the absence of a policy framework to address their usage, conservation and protection, prompted this study. INTACH proposed a comprehensive and pioneering study to examine various issues pertaining to riverine islands of the Ganga [other than the deltaic region of Sundarbans where the islands are subject to tidal influences] and lay out the contours of a position paper for riverine island governance with the prime objective of enabling islands to play a healthy role in the river eco-system, possibly enabling other environmentally compatible uses [on select islands] and certainly preventing misuse of the islands for inappropriate activities.

Typically, a fluvial riverine island can be defined as **‘a land mass within a river channel that is separated from the floodplain by water on all sides, exhibits some stability, and remains exposed during bankfull flow’** (whereas a sandbar may be submerged). Most international studies have considered the riparian vegetation to be playing an important role in the formation and stabilization of riverine islands along with being an important distinguishing factor between an island and a sandbar. Broadly, the riverine islands formation is in two ways – those which are newly formed mostly by initiation on

gravel bars within the rivers and second that are formed due to dissection of a floodplain region. In India, riverine islands and sandbars occur in most major rivers with some important examples being – Majuli Island in the Brahmaputra River (considered to be one of the world’s biggest riverine islands and the first island district in India), Raghapur Diara in the Ganga River, Srirangapatna and Srirangam Islands in the Cauvery River, Kabirvad Island and Omkareshwar Mandhata Island in Narmada River, Divar Island in Mandovi River and islands of Godavari River. These islands are known by different names regionally such as – ‘*Taapu*’, ‘*Diara*’, ‘*Lanka*’, ‘*Kudru*’, ‘*Bet*’ and ‘*Char*’. Despite these examples, studies in India have, hitherto, been concentrated on Majuli Island while scanty information is available for others including islands in the Ganga River.

The riverine islands in the Ganga River are known to form in various shapes which are dependent on factors such as discharge, velocity, gradient and sediment load. The **GIS-based mapping of riverine islands and sandbars** yielded the presence of 2397 islands of which 1198 islands have an area of more than 5 hectares. Among these 1198 islands, 790 are barren lands/sand bars without any defined land use, 132 islands are under agriculture and human settlements while 250 islands are under forest or vegetation cover.

For the current study, 13 islands were selected for **survey** in the Ganga River main stem and Hooghly River stretch. The field studies involving biodiversity surveys and stakeholder interactions underscored various issues that varied from island to island. Overall, it was recorded that the increasing land pressures played a pivotal role in shifting the focus of local communities (especially from riparian villages, towns and cities) towards exploiting the riverine islands and sandbars. Mostly this was done for agricultural and horticultural purposes with vegetables and fruits being chief products on islands closer to towns and cities. This, however, led to the clearing of native vegetation which adversely impacted biodiversity and threatened habitats of turtles, otters and several birds on the islands. Upon interactions, several cultivators reiterated that they had the necessary ownership or permissions to undertake cultivation on islands but often failed to back their claims with any documents.

The islands in the upper reaches of the Ganga River such as those in Haridwar Distt. supported a rich biodiversity and served as crucial migratory corridors for Elephants, Deer and other wildlife. In the middle and lower stretches of the Ganga River, wildlife such as Wild Boars, Golden Jackals, Nilgai, smooth-coated otters, and several bird species found their abode on the islands. *Saccharum* sps. grasses were found to be growing luxuriantly on islands and were often collected by local communities for thatching hut roofs, making brooms, baskets and granaries. Cattle grazing by riparian communities was also recorded to be a common activity on the riverine islands.

In certain islands such as Raghapur Diara (Vaishali) and Ramchandipur Diara (Varanasi), people have owned lands for years and with the passage of time are developing these places into full-fledged towns with all necessary amenities including multi-storey constructions but without any regulations. While the former is being connected by a new bridge, the latter is already well connected with the mainland through a proper bridge. Similar connectivity demands are resonating among island dwellers in Jharkhand and West Bengal as reported during the survey. In several islands, unauthorized activities and other criminal activities often go unnoticed due to jurisdictional ambiguities between districts on opposing banks or in some cases two different states on opposite river banks.

The following categories of **land uses**, deliberate or natural, were observed, although not uniformly applicable to each island :

- ❖ Woodlands, wildscapes, habitats
- ❖ Cultivation
- ❖ Settlements
- ❖ Cottage industry [fisheries hub on one island]
- ❖ Sand mining

Survey of literature and workshop inputs suggest the possibility that islands in urban stretches could be used for eco-tourism and light commercial development.

In order to analyze various **issues** recorded during the surveys and address the same, a thorough **legal analysis** was also carried out pertaining to existing laws and regulations in India dealing with riverine islands. The earliest and most prominent known regulation in this regard is the Bengal Alluvion & Diluvion Regulation, 1825 developed by the erstwhile British administration which deals with ownership of lands either gained by river action or cut-off from the mainland due to course changes. Although this Act was modified and discarded later, its different provisions were adopted in land regulations of States such as Bihar, West Bengal, Odisha and even Punjab. While it was clear that land within the river was the property of the state governments, several state-level Acts/regulations complicate the picture of ownership and tenures. Among recent national Acts/Notifications some contradictions or grey areas were noted between the River Ganga (Rejuvenation, Protection and Management) Authorities Order [2016], National Waterways Act [1982] and Wildlife Protection Act [1972] which have been addressed in the recommendations.

The national level legislation such as the River Ganga (Rejuvenation, Protection and Management) Authorities Order, 2016, EIA Notification [to the extent applicable], and the Water Act – are oriented towards conserving the health of the river system. The Wildlife Protection Act comes into play where river sanctuaries are involved and would therefore have a bearing on islands within the sanctuary zone as well as on the riparian buffer zone.

The 1985 National Waterways Act's provisions enabling the removal of any obstruction in the navigational channel seem to belong to an era where the river systems were little understood and, in fact, taken for granted. Such a provision would allow unhindered modification of islands and bank profiles. Where islands are concerned the LARR Act would then come into play as LARR ACT not only mandates compensation against land acquisition but also loss of occupations.

As no extant law/regulation permits construction on islands the islands on which construction has come up in violation, both by government and by private individuals, are on the wrong side of the law. The River Ganga (Rejuvenation, Protection and Management) Authorities Order, in fact, bars any construction on the 100-year floodplain of the river.

There clearly appears to be a need to simplify and consolidate the state-level laws to bring about internal consistency and align them with the objectives of the national-level laws. An overriding national legislation which balances the tenurial issues, need to accommodate the existing genuine cultivators while attaining and sustaining the robust health of the river ecosystem seems to be required.

The study proceeded to identify various **stakeholders** as follows :

- ❖ Settlers with built residential establishments
- ❖ Cultivators with ownership documents
- ❖ Cultivators without ownership documents
- ❖ District Administration for administrative jurisdiction
- ❖ District Forest & Wildlife Dept. [for corridors, river sanctuaries, wildscapes and habitats, ecotourism]
- ❖ Basin Manager [NMCG] for resolution of complex issues arising out of actions or inactions of various stakeholders and as the human representative of the river systems
- ❖ IWAI [Inland Waterways Authority of India] as navigational routes can require island modification [horizontally]
- ❖ Urban local bodies & town planning departments in whose jurisdiction islands in urban stretches fall
- ❖ Wildlife having actual and potential habitats represented by DFO, CWW, relevant civil society organization[s]

Other **key issues** pertaining to Ganga riverine islands include definitional issues and complexities in ownership and tenures on islands. Thus, for e.g.

- i. The case of fordable islands where tenurial rights but not ownership may exist.
- ii. The case of non-fordable islands which belong to the State Governments in their entirety. Here again, the district authorities can give tenurial rights for cultivation but only for limited periods.

With increasing human settlements, there is a spurt in the **construction** of multistoried houses, schools, panchayat offices, water tanks, markets, roads, permanent bridges and many other city-like facilities on some islands. In the absence of any regulations, the residents owning lands on these islands are freely undertaking construction and an urban land market is beginning to emerge in a couple of cases. Despite the threat of damage during flooding, some islands, particularly those close to large cities, are now seeing changes in land use with urban colonization. Construction of buildings and residential settlements is not recommended on the grounds that these are against extant law, vulnerable to floods, erode already shrinking wildlife habitats, can generate pollution affecting surface and groundwater regime, affect aquatic life through increased traffic, noise and light pollution. Such settlements will also create demands for road and bridge connectivity thereby opening the island to further undesired exploitation.

Modification Issues – it needs to be considered as to the circumstances under which modification of islands, in the horizontal and vertical plane, can be permitted.

- i. For eg. an island keeps on expanding to narrow down its containing channels and thereby choke navigation. In such a situation the island may require horizontal modification of one of its containing channels to maintain navigation. The extent of modification should be minimal based on the requirements of large vessels.
- ii. Bridges for connectivity are also undesirable as they increase accessibility, rob the island of its isolated, undisturbed and natural status, driving up land costs which then attract construction demands by real estate lobbies.

Other **issues** pertain to opposing concerns of the several stakeholders, jurisdictional ambiguities [often the result of shifting river course], increasing human footprint, agriculture expansion, encroachments, biodiversity and ecosystem services loss, use of chemicals in agriculture, pressure for bridge /road access which in turn leads to land price spikes and unauthorized construction, lack of sound legal framework and inability to identify the islands as most of them have no nomenclature.

Business as Usual Scenario : What would happen if the present situation is allowed to develop unhindered? Hardin's 'Tragedy of the Commons' model predicts the eventual

overexploitation or degradation of all resources used in common. A situation can be visualized wherein more islands would be colonized, more habitats and woodlands cleared, more areas brought under cultivation, new sources of pollution would develop mid-river and growing populations would exert political pressures for flood protection measures, thereby completely destroying the natural character of the river.

Policy Based Regulated Scenario : Under a policy-regulated scenario consistency would be achieved amongst state-level and national laws, the interests of cultivators accommodated, while river conservation and wildlife refuges would be the drivers of interventions or prevention of interventions. A very limited number of islands in the urban stretch can be permitted to have recreational activities and other select islands can have controlled eco-tourism activity, all in the non-monsoon season.

Policy Objectives : This policy position paper aims to ensure the following objectives:

- i. Settling the ownership issues of the river islands
- ii. Settling the usage issues of the river islands
- iii. Promoting inventory and mapping of all river islands
- iv. Resolving legal anomalies

The position paper **recommends** a balance between environmental, administrative and settlement challenges. Towards this end, it advocates reconciliation between the objectives of national-level law and state-level legislation. The paper retains the interests of existing cultivators while preventing destructive and flood-vulnerable construction on islands.

The position paper defines a river island as – **“A piece of land definitely surrounded by water during the monsoons and is fairly stabilized with natural vegetation”**.

Ownership : The State Government is/will be the owner of the islands in existence as of the date of the policy, those which may emerge later and those sandbars which evolve as islands. Where private property exists on certain islands, the gross footprint of the same will not be expanded and the remaining unregistered lands will remain in the ownership of the State.

The paper also advocates amendments to the River Ganga (Rejuvenation, Protection and Management) Authorities Order, 2016 to explicitly cover islands. It further addresses the potential contestation between the National Waterways Act and the River Ganga (Rejuvenation, Protection and Management) Authorities Order, 2016. It also advocates the need for amendment in state-level legislation for internal consistency and consistency across the Ganga Basin. Further, the paper recommends amendments to state-level legislation to regularize and freeze residential and related construction where it has occurred on a large scale.

A nomenclature system has also been proposed to name the islands thereby raising their visibility in the minds of stakeholders. Lastly, the position paper bats for the interest of wildlife and ecology which finds refuge on these islands.

The issue of **permissible landuse** is dealt with in detail. The landuse of islands falling in non- urban stretches of the rivers will be completely rural. Thus, no construction activity will be allowed here as is the law.

- i. Where cultivation is being carried out cultivated area as of the date of policy notification may be established by satellite imagery supported by ground truthing surveys. No further expansion of cultivable area is to be permitted and the remaining area is to be maintained wild or rewilded
- ii. In case cultivation is being carried out legitimately the agronomic practices will be completely organic and without a trace of chemical inputs and gradually transformed into permaculture with appropriate steps by the authorities.
- iii. Further, sandmining will not be allowed on the defined islands.
- iv. Eco-tourism, observing eco-tourism code of conduct, may be allowed on the islands.
- v. Islands falling in the urban stretches may be allowed for eco-tourism use such as trails and camping and some forms of recreation and extremely strictly defined temporary construction with all pollution-preventing measures.

Construction on Islands - With regards to construction the following policy injunctions will be followed :

- i. Existing construction on privately held lands within large settlements, as existing on the date of the policy, can remain. However, the expansion of footprint and vertical growth will be frozen as of the date of the policy notification. Even this will be an exception to state laws which will require an amendment
- ii. Construction on empty private plots is not to be allowed from the date of policy notification.

Accessibility : Construction of bridges to the islands from the banks is not to be permitted except in the case of islands with major existing settlements.

Island erosion : Erosion of riverine islands is a major issue as observed on Raghapur *Diara* along with other islands. The most environment-friendly approach to this challenge is stabilizing the island banks with riparian grass, specially *Saccharum* sps. and other native riparian vegetation. Not only do these provide long-term bank stability but also support native biodiversity and enhance climate resilience.

Specific **recommendations** include promoting organic agriculture, safeguarding native vegetation and wildlife in newly formed islands and islands which are not privately owned, chalking out sustainable development plans for bigger islands with significant human footprints, avoiding permanent connectivity as far as possible, increasing research studies in this subject, resolving jurisdictional issues, prevention of island erosion.

It is suggested that the National Mission for Clean Ganga (NMCG) can be the nodal body for developing and implementing a sound riverine islands policy which can be effectively monitored in conjunction with State Ganga Committees and various District Administrations concerned. The policy emanating out of this position paper would be applicable to the main stem of the Ganga River along with its tributaries and tributaries of those tributaries.

Monitoring and Implementation : National Mission for Clean Ganga (NMCG) can be the nodal body for developing and implementing riverine island policy. Any activity concerning the riverine islands and sandbars would need prior approval from them. The State Ganga Committees in conjunction with the concerned District Administration can effectively monitor the implementation of guidelines from time to time and apprise about the same to NMCG.

CHAPTER 1 – ISSUES PERTAINING TO RIVERINE ISLANDS

- 1.1 River islands have been a blind spot amongst basin managers, administrators and even river experts. Awareness about river islands varies from river to river and from State to State [even on the same inter-state river]. Confining this policy study to the Ganga basin, there is a surprising lack of awareness about islands amongst the public, the administrators, the State Water Resources Departments as well as stakeholders like the IWAI [Inland Waterways Authority of India]. Existing state-level regulations are outdated and national and state-level Acts/Regulations are not aligned towards the common objective of river conservation.
- 1.2 A *laissez faire* approach has, thus far, been taken towards river islands, which amounts to a scenario devoid of guiding policy. River islands are now coming under anthropogenic pressures as increasing population and land hunger consume the riparian zone and adjacent areas. Further delay in policy formulation and implementation can result in irreversible damages and intractable legal disputes. Prevention of a malady with foresight is always better than cure in hindsight. Step by step this policy study has brought us to the point where the critical issues can be elucidated in the following sections.
- 1.3 **Definition of River Islands :** A standard definition of an island is “**a piece of land surrounded by water throughout the year with some part remaining unsubmerged at all times**”. However, this definition is more applicable to non-monsoonal rivers with a fairly constant flow around the year. In the context of Ganga, the definition has to be modified to – “**a piece of land definitely surrounded by water during the monsoons and is fairly stabilized with natural vegetation**”. This definition would take care of the fact that the Ganga is facing humongous water abstraction which reduces the flow very significantly particularly in post-monsoon months thereby rendering the island fordable over at least one

side dry channel. It would also rule out sandbar formations. However, a sandbar, if not disturbed may graduate to island status over time.

1.4 **Identification of Islands** : Islands have been below the radar of decision-makers as well as the public at large and a major reason for this is the fact that almost all the islands, barring a handful, are nameless and thus do not resonate in any public, academic or administrative discourse. A system of nomenclature can be helpful in raising the island profile in public, administrative and riverine fraternity discourse.

1.5 **Applicability of Policy** : The proposed policy will apply to the main stem of the Ganga as well as tributaries and tributaries of those tributaries, as is required in a basin approach.

1.6 **Stakeholders** : The preceding study has identified the following stakeholders :

- ❖ Settlers with built residential establishments
- ❖ Cultivators with ownership documents
- ❖ Cultivators without ownership documents
- ❖ District Administration for administrative jurisdiction
- ❖ District Forest & Wildlife Dept. [for corridors, river sanctuaries, wildscapes and habitats, ecotourism]
- ❖ Basin Manager [NMCG] for resolution of complex issues arising out of actions or inactions of various stakeholders and as the human representative of the river systems
- ❖ IWAI [Inland Waterways Authority of India] as navigational routes can require island modification [horizontally]
- ❖ Urban local bodies & town planning departments in whose jurisdiction islands in urban stretches fall
- ❖ Wildlife having actual and potential habitats represented by DFO, CWW, relevant civil society organization[s]

1.7 **Ownership** : This is one major issue pertaining to the riverine islands of the Ganga River. As per law, all the land of the river bed belongs to the Government. The following typology of river islands has been observed as part of this study :

- iii. In some cases, where a part of the mainland gets separated from the bank owing to changes in river course and subsequently is surrounded by water on all sides, that island is still treated as private land belonging to the individual[s] from whose land it got disconnected. However, in such cases, due to the fluvial action of the river if more silt/sediment is deposited on such land leading to an increase in the area of that island, additionally accreted land should belong to the concerned Govt. authorities.
- iv. The case of fordable islands where tenurial rights but not ownership may exist.
- v. The case of non-fordable islands which belong to the State Governments in their entirety. Here again, the district authorities can give tenurial rights for cultivation only for limited periods.
- vi. Most of the newly formed sandbars, some of which get stabilized by an ecological succession of riparian vegetation, are not owned by any individual or recognized by any authority making them extremely vulnerable to unfettered exploitation mainly by the riparian communities in proximity of such a land.
- vii. In the case where islands are eroded away partly or completely, the tenants have no claims on the Government

1.8 All islands where tenures are granted have to be frequently surveyed as per extant State legislations/regulations for changes in area due to river action. However, this is hardly ever done by overworked administrations. Thus, during the fieldwork, there was hardly a cultivator on the surveyed islands who was able to show any official paper [*patta*].

1.9 **Jurisdictional Ambiguity** : In several districts along Ganga, the distinguishing boundary between districts on opposite banks lies within the river. But when the

river shifts course, sometimes by hundreds of meters, such course alteration creates a challenging situation. With these massive course shifts, there is also shifting in the size, shape and sometimes location of islands and sandbars which often leads to jurisdiction issues. Furthermore, in case where islands are formed due to cut-off separation from the bank, they may, over years, sometimes drift towards the opposite bank, thereby physically falling into the district on the opposite bank despite being part of another district.

1.10 During the field survey towards lower stretches of the Ganga River, particularly in the islands of Sahibganj and Malda Districts, it was also observed that these groups of islands fell in a tri-junction, with parts of these large island areas falling in different States viz. Bihar, Jharkhand & West Bengal. Under the Bengal Act, the centre line [thalweg] of the river channel is the line determining the territorial jurisdiction of the island – if an island falls on one side of the thalweg the district on the closer bank has jurisdiction. Further, alteration in the course can cause a shift in the centre line. However, jurisdiction remains indeterminate when the island partly falls into two districts, creating a no man's land, often exploited by criminal elements as a safe refuge. The islands particularly in the lower stretches of Ganga River in Bihar and Jharkhand are known locally as '*Diaras*' and were noted to be hotspots for criminal activities as stated by several interlocutors in the region. Factors such as jurisdictional conflicts, remote location and difficulty in accessibility resulted in several *Diaras* becoming a hub for anti-social elements.

1.11 **Encroachment** : The river islands are vulnerable to encroachers who clear the wild vegetation, woodlands and minor forestation to start cultivation. Despite persistent requests, none could show papers regarding land titles nor land revenue receipts. Off the record, it was understood that lower-level officials of the revenue department permitted cultivation against consideration. In some cases, especially parts of Jharkhand & West Bengal, immigrants from Bangladesh along with those affected by erosion have been settled on riverine islands. Several islands and sandbars are prone to encroachments chiefly from riparian communities owing to

the high pressure on land in riparian areas. Jurisdictional ambiguity creates a window of opportunity for encroachments which opportunity is exploited by residents of riparian towns and villages. In most cases observed during the field survey, the encroached islands were cleared of their native vegetation to pave the way for agriculture and in some cases constructions of permanent [some by govt. departments] nature were also observed.

1.12 **Legal Issues** : An extensive survey of legal issues [Chapter 8] has thrown up several complexities elaborated below :

- i. The States have been treating islands as surplus lands with a series of Acts/Regulations/Notifications responding to primarily ownership and settlement issues. The series starts with the Bengal Act of 1825 which applied to the areas which were under the Bengal Presidency. Successive Acts/Regulations/Notifications often contradict the earlier ones giving rise to contradictions and litigation.
- ii. All laws are agreed upon the fact that land in the river belongs to the government and thus cultivators do not own lands on the islands except in a few exceptional cases.
- iii. The national level legislation such as the River Ganga (Rejuvenation, Protection and Management) Authorities Order, 2016, EIA Notification [to the extent applicable], and the Water Act – are oriented towards conserving the health of the river system.
- iv. The Wildlife Protection Act comes into play where river sanctuaries are involved and would therefore have a bearing on islands within the sanctuary zone as well as on the riparian buffer zone.
- v. The 1985 National Waterways Act's provisions enabling the removal of any obstruction in the navigational channel seem to belong to an era where the river systems were little understood and, in fact, taken for granted. Such a provision would allow unhindered modification of islands and bank profiles. Where islands are concerned the LARR Act would then come into play as LARR ACT not

only mandates compensation against land acquisition but also loss of occupations.

- vi. As no extant law/regulation permits construction on islands the islands on which construction has come up in violation, both by government and by private individuals, are on the wrong side of the law. The River Ganga (Rejuvenation, Protection and Management) Authorities Order, in fact, bars any construction on the 100-year floodplain of the river.
- vii. There clearly appears to be a need to simplify and consolidate the State-level laws to bring about internal consistency and align them with the objectives of the national-level laws. An overriding national legislation which balances the tenurial issues, the need to accommodate the existing genuine cultivators while attaining and sustaining the robust health of the river ecosystem seems to be required.

1.13 Vegetation & Biodiversity Loss : Several islands surveyed were found to have rich riparian vegetation often dominated by *Saccharum* sps. along with other grasses and some herbs/shrubs and trees. This vegetation is crucial in supporting habitats, as a movement corridor and as a food resource for various fauna including mammals, reptiles, amphibians and birds. However, those islands which have privately owned lands, have township-like development and are closer to major cities, are often stripped off their natural biota ultimately impacting biodiversity and ecology. Furthermore, nesting sites of turtles and several bird species, especially migratory species, are adversely impacted due to the transition to a human-dominated landscape. Thus, a certain amount of wildscape needs to be maintained on the islands – this would not only meet the needs of wildlife but also stabilize the islands. The creation of afforested patches in the island centre, around the highest point, would also create a place where wildlife could retreat to in floods.

1.14 Agricultural issues: Agriculture was observed to be an important human-induced activity on the riverine islands of the Ganga River. Several crops including rice, wheat, maize, mustard, various pulses, seasonal vegetables and fruits were found to

be cultivated on the islands and sandbars owing to the fertile alluvium deposits brought by the Ganga River and its tributaries. In islands closer to major cities, vegetables and fruits took more priority in island agriculture as compared to islands in remote locations. However, despite the rich alluvium deposition, fertilizers and pesticide usage was recorded among the surveyed sites which is not conducive to the river system.

1.15 **Construction on Islands:** With increasing human settlements, there is a spurt in the construction of multistoried houses, schools, panchayat offices, water tanks, markets, roads, permanent bridges and many other city-like facilities on some islands. In the absence of any enforcement of existing legislation/regulations, the residents owning lands on these islands are freely undertaking construction and an urban land market is beginning to emerge in a couple of cases. Despite the threat of damage during flooding, some islands, particularly those close to large cities, are now seeing changes in land use with urban colonization.

1.16 **Landuse Issues :** The following categories of land uses, deliberate or natural, were observed, although not uniformly applicable to each island :

- ❖ Woodlands, wildscapes, habitats
- ❖ Cultivation
- ❖ Settlements
- ❖ Cottage industry [fisheries hub on one island]
- ❖ Sand mining

Survey of literature and workshop inputs suggest the possibility that islands in urban stretches could be used for eco-tourism and light commercial development.

1.17 Construction of buildings and residential settlements is not recommended on the grounds that these are against extant law, vulnerable to floods, erode already shrinking wildlife habitats, can generate pollution affecting surface and groundwater regime, and will also affect aquatic life through increased traffic, noise

and light pollution. Such settlements will also create demands for road and bridge connectivity thereby opening the island to further undesired exploitation.

- 1.18 In the couple of exceptional cases where settlements are present their further vertical and horizontal expansion should be frozen. Even this would require an amendment of laws
- 1.19 **Cultivation** : Land left after meeting the requirement of a peripheral buffer riparian grass strip of adequate width and after retaining existing natural patches of woodlands and habitats may be permitted for agricultural use. Here, only organic inputs should be allowed and farmers trained in permaculture so as to co-exist with wildlife.
- 1.20 **Modification Issues** – it needs to be considered as to the circumstances under which modification of islands, in the horizontal and vertical plane, can be permitted.
- iii. For eg. an island keeps on expanding to narrow down its containing channels and thereby choke navigation. In such a situation the island may require horizontal modification of one of its containing channels to maintain navigation. The extent of modification should be minimal based on the requirements of large vessels.
 - iv. Bridges for connectivity are also undesirable as they increase accessibility, rob the island of its isolated, undisturbed and natural status, driving up land costs which then attract construction demands by real estate lobbies.
 - v. Sandmining of established islands as per the definition at the beginning of this Chapter may not be permitted as it destroys habitat, hurts river flow and destabilizes the islands
 - vi. The possibility of adding soil from the edges towards the centre of the islands to create a refuge zone above HFL [high flood level] for wildlife may be considered.

vii. Lastly, islands which have been cleared of natural vegetation for cultivation by encroachers need to be revegetated for stabilization as well as for restoring habitats

- 1.21 **Implementing Authority :** Which agency will be the implementing authority for the proposed island policy? For that matter should island policy be a standalone policy or an amendment to existing legal instruments? Since the issue largely comes under the Ministry of Jal Shakti [MoJS] and pertains to the Ganga River the likely option is MoJS acting through its lead agency on Ganga i.e. National Mission for Clean Ganga [NMCG].
- 1.22 The National Mission for Clean Ganga is mandated to undertake massive afforestation activities to conserve biodiversity, along with developing the flora & fauna and carrying out effective plans & policies to conserve dolphins, turtles and varieties of fish. So far such activities have been confined to the bank riparian areas. The islands' edges along their containing channels should also be considered as riparian zones.
- 1.23 NMCG administers some programs and projects directly and at the State level, State Program Management Groups (SPMGs) act as the implementing arm of State Ganga Committees. Thus, this newly created structure attempts to bring all stakeholders on a single platform to take a holistic approach to clean and rejuvenate Ganga. Further below are the District Ganga Committees, which include representation from the District Administration, presided upon by the District Magistrates. Further down the hierarchy are hundreds of Ganga Praharis or citizen volunteers with basic training.
- 1.24 Thus, this existing structure, consisting of the basin manager, district administration and volunteers, needs to be armed with policy instruments to manage the islands in consonance with the requirements of people's livelihoods, riverine ecology, ecosystem services and hydrology.

- 1.25 **Area of Policy Application :** The proposed policy should apply to the entire Ganga Basin i.e. tributaries and main stem of Ganga. Islands are often found at confluences and can be considered part of either river. Tributaries too have similar issues which are even less noticed than on the main river stem. Hence, differential treatment of tributaries and main stem is not advisable.
- 1.26 **Scenario Development:** Two scenarios can be visualized – (a) Business as usual and (b) policy-based regulated scenario.
- 1.27 **Business as Usual Scenario :** What would happen if the present situation is allowed to develop unhindered? Hardin's 'Tragedy of the Commons' model predicts the eventual overexploitation or degradation of all resources used in common. The tragedy of the commons refers to a situation in which individuals with access to a public resource (also called a common) act in their own selfish interest and, in doing so, ultimately deplete the resource for all. We can visualize a situation whereby more islands would be colonized, more habitats and woodlands cleared, more areas brought under cultivation, new sources of pollution would develop mid-river and growing populations would exert political pressures for flood protection measures, thereby completely destroying the natural *character* of the river.
- 1.28 **Policy Based Regulated Scenario :** Under a policy-regulated scenario consistency would be achieved amongst State level and national laws, the interests of cultivators accommodated, while river conservation and wildlife refuges would be the drivers of interventions or prevention of interventions. A very limited number of islands in the urban stretch can be permitted to have recreational activities and other select islands can have controlled eco-tourism activity, all in the non-monsoon season.

CHAPTER 2 – FINAL POSITION PAPER

Summary – The position paper offers a definition of river islands. It goes on to balance environmental, administrative and settlement challenges. Towards this end, it advocates a reconciliation between the objectives of national-level law and state-level legislation. The paper retains the interests of existing cultivators while preventing destructive and flood-vulnerable construction on islands. The paper also advocates amendments to the River Ganga (Rejuvenation, Protection and Management) Authorities Order, 2016 to explicitly cover islands. It further addresses the potential contestation between the National Waterways Act and the River Ganga (Rejuvenation, Protection and Management) Authorities Order, 2016. It also advocates the need for amendment in state-level legislation for internal consistency and consistency across the Ganga Basin. Further, the paper recommends amendments to state-level legislation to regularize and freeze residential and related construction where it has occurred on a large scale. A nomenclature system has also been proposed to name the islands thereby raising their visibility in the minds of stakeholders. Lastly, the position paper bats for the interest of wildlife and ecology which finds refuge on these islands.

- 2.1 **Introduction :** Riverine islands are integral parts of the river ecosystem throughout the world supporting rich biodiversity and facilitating their movements along with providing numerous other ecosystem services to mankind. However, in India, explosive pressures for urbanization and hunger for cultivable lands [which have been exhausted on the banks] have made islands vulnerable to human activities destructive of nature and to colonization which bodes ill for the river ecosystem.
- 2.2 **Focus of the Policy :** This position paper focuses on reconciling the mandate of various national-level laws amongst themselves, reconciling the mandates of national and state-level laws, highlights the need for the basin states to examine their several laws on the subject with a view to make them internally consistent.

The paper also suggests the need for exceptions for existing large-scale residential and related developments. Finally, the position paper bats for wildlife and wildscapes on river islands to maintain the integrity of the river ecosystem which system has greatly weakened due to human colonization of riparian areas. This last, if strengthened would maintain ecosystem services from the river islands.

2.3 **Policy Objectives :** This position paper aims to ensure the following objectives:

- v. Settling the ownership issues of the river islands
- vi. Settling the usage issues of the river islands
- vii. Promoting inventory and mapping of all river islands
- viii. Resolving legal anomalies

2.4 **Applicability of the Policy :** The policy emanating out of this position paper would be applicable to the main stem of the Ganga River along with its tributaries and tributaries of those tributaries. Inferences from this position paper can be drawn for applicability to other river systems in India.

2.5 **Intended Audience of this Position Paper :** The position paper would assist functionaries from the following institutions in contributions towards the development of policy options for addressing the issues pertaining to riverine islands:

- National Mission for Clean Ganga (NMCG)
- Central Ministries and agencies
- State Revenue and Tourism Departments
- Concerned District Administrations
- Concerned State and District Forest Departments
- NITI Aayog
- Inland Waterways Authority of India
- Experts and Researchers in this sector

- 2.6 **Defining the Riverine Islands** : For the current context, a river island can be defined as – “A piece of land definitely surrounded by water during the monsoons and is fairly stabilized with natural vegetation”.

Rationale for the definition – Owing to factors such as the construction of dams & barrages restricting the water flow and diversion of water into canals for agriculture, there is not sufficient water left in the Ganga River main stem during non-monsoon months that can actually be present on both channels around a riverine island. Most islands are thus left with one completely dried-up channel often referred to as ‘*Sota*’ which exposes them to unhindered access by local residents, i.e. making them fordable which was not the case earlier. It is only during the monsoon season that the island gets completely surrounded by Ganga River water on all sides and even gets submerged. Furthermore, the literature survey reveals that riverine islands are formed as successional vegetation leads to stabilization of sandbars which is also a significant differentiation character between these two land masses.

- 2.7 **Identification & Nomenclature of Islands** : More than 2000 islands and sandbars exist in the Ganga river main stem of which only some significant ones have been named such as Raghapur *Diara*, Shankerpur *Diara*, Ramchandipur *Diara*, *Char* Mahammadpur, *Nayachar* island and *Majhara Diara* to cite as few examples. Most others including the major riverine island of Prayagraj Distt. remain obscure due to the lack of any specific identification or nomenclature. Hence, it is essential to develop a system of island/sandbar identification so as to create their information database and safeguard them under appropriate regulations. Based on the field survey, it was recorded that the common terms used for referring to riverine islands are ‘*Taapu*’ in parts of Uttarakhand and Uttar Pradesh, ‘*Diara*’ in parts of eastern Uttar Pradesh, Bihar and Jharkhand, and ‘*Char*’ in parts of West Bengal. In some cases, the term – ‘*Reta*’ was ascribed for identification of sandbars an example of which is ‘*Kewatbir ka Reta*’ in Mirzapur Distt. However, the following matrix provides examples of a suggested system of nomenclature. The names should

ultimately be recorded in the various official maps. An additional column can be provided for common names [which may be provided where islands are nameless] :

State & District Name	Riverine island & Sandbars	Distance from River Origin	Final Nomenclature
State: Uttarakhand (Code – UK) District: Haridwar (Code – HR)	Code ' T ' can be used for stabilized riverine islands of any size falling in the district Code ' S ' can be used for sandbars of any size falling within the district	Example: Distance of island from river origin is 108 Kms & sandbar is 109 Kms.	For riverine island – UKHRI108 For sandbars – UKHRS109
State: Uttar Pradesh (Code – UP) District: Prayagraj (Code – PR) District: Varanasi (Code – VN)	Code ' R ' can be used for stabilized riverine islands of any size falling in the district Code ' S ' can be used for sandbars of any size falling within the district	Example: Distance of island from river origin is 519 Kms & sandbar is 522 Kms.	For riverine island – UPPRI519 For sandbars – UPPRS522 Varanasi – UPVNI & UPVNS
State: Bihar (Code: BR) District: Patna (Code – PT) District: Bhagalpur (Code – BG)	Code ' R ' can be used for stabilized riverine islands of any size falling in the district Code ' S ' can be used for sandbars of any size falling within the district	Example: Distance of island from the river origin is 1152 kms in Patna & 1356 Kms in Bhagalpur	For Patna: BRPTI1152 For Bhagalpur: BRBGI1356
State: Jharkhand (Code – JH)	Code ' R ' can be used for stabilized riverine islands of any size falling	Example: Distance of island from river origin	For Island: JHSBI1420

State & District Name	Riverine island & Sandbars	Distance from River Origin	Final Nomenclature
District: Sahibganj (Code – SB)	in the district Code ‘ S ’ can be used for sandbars of any size falling within the district	is 1420 Kms & sandbar is 1426 Kms.	For sandbar: JHSBS1426
State: West Bengal (Code – WB) District: Malda (ML) District: Murshidabad (MR)	Code ‘ R ’ can be used for stabilized riverine islands of any size falling in the district Code ‘ S ’ can be used for sandbars of any size falling within the district	Example: Distance of island from river origin is 1567 Kms and sandbar is 1634 Kms.	For Island: WBMLI1567 or WBMRI1567 For sandbar: WBMLS1634 or WBMRS1634
*NOTE:			
<ul style="list-style-type: none"> • In cases where the islands are known popularly by specific names, they can continue to be used in addition with this nomenclature. • All nameless islands may also be provided a simple common name – thus, the name of the nearest village can be attached to the words <i>taapu, diara, char</i> as the case may be • In cases where the islands are distributed in two Districts of either same or different States, the nomenclature can be suitably modified to reflect this situation. 			

2.8 **Key Stakeholders** : The preceding study has identified the following stakeholders :

- ❖ Settlers with built residential establishments
- ❖ Cultivators with ownership documents
- ❖ Cultivators without ownership documents
- ❖ District Administration for administrative jurisdiction

- ❖ District Forest & Wildlife Dept. [for corridors, river sanctuaries, wildscapes and habitats, ecotourism]
- ❖ Basin Manager [NMCG] for resolution of exceptional issues and monitoring
- ❖ IWAI [Inland Waterways Authority of India] as navigational routes can require island modification [horizontally]
- ❖ Wildlife having actual and potential habitats represented by DFO, CWW, relevant civil society organization[s]

2.9 **Ownership** : The State Government is/will be the owner of the islands in existence as on date of policy, those which may emerge later and those sandbars which evolve as islands. Where private property exists on certain islands, the gross footprint of the same will not be expanded and the remaining unregistered lands will remain in the ownership of the State. [The possibility of acquisition of privately owned lands on islands can also be examined].

Where tenurial rights or occupancy rights exist for cultivators the same may be honoured but must not be allowed to graduate to ownership.

2.10 **Jurisdiction** : The jurisdiction aspect has different scenarios –

- i. In the case both banks adjacent to an island are in the same district then the administration of that district would have jurisdiction of the entire island.
- ii. In the case the opposing banks are in different districts then the central line of the active river channel, determined during the peak flow of the river in the monsoon season of the policy notification year, will run through the island and the opposing districts will have jurisdiction up to the line which will be demarcated by markers. In the instance that an island shifts its position, the division line across the island will continue to remain frozen in position. However, the state govt. can exercise the preference to retain the entire island in a single district. This preference may be influenced by the existing revenue records.

- iii. In the case the island is entirely on one side of the central line of the active river channel as determined during the peak flow of the river in the monsoon season of the policy notification year, the island will remain in the jurisdiction of the district on the closer bank.
- iv. In case an island shifts position from one side of the central line, as determined above, to the other, the island will remain with the original district of jurisdiction.
- v. In the singular case of an island at a trijunction of States or districts, the jurisdictional boundaries can be partly resolved through the central line of river channel approach and partly through mutual accommodation.

2.11 Landuse :

- vi. The land use of islands falling in non-urban stretch of the rivers will be completely rural. Thus, no construction activity will be allowed here as is the law.
- vii. Where cultivation is being carried out cultivated area as on date of policy notification may be established by satellite imagery supported by ground truthing surveys. No further expansion of cultivable area is to be permitted and the remaining area is to be maintained wild or rewilded
- viii. On islands where there is no cultivated area the same are to be maintained wild or rewilded
- ix. In case cultivation is being carried out legitimately the agronomic practices will be completely organic and without a trace of chemical inputs and gradually transformed into permaculture with appropriate steps by the authorities.
- x. Further, sandmining will not be allowed on the defined islands.
- xi. Eco-tourism, observing eco-tourism code of conduct, may be allowed on the islands. Any temporary structures allowed will have to follow extremely strict definitions and regulations
- xii. Islands falling in the urban stretches may be allowed for eco-tourism use such as trails and camping and some forms of recreation and extremely strictly defined temporary construction with all pollution preventing measures. The construction zone may not exceed 1% of the island area for islands up to 5 ha spread. Above that a sharply sliding scale of the construction area apply. Thus, on an island of

250 sq. km. the temporary construction zone may not exceed 0.005% of the island area. The height of structures is not to exceed a single storey or 4m from ground level.

2.12 **Construction on Islands** - With regards to construction the following policy in junctions will be followed :

iii. Existing construction on privately held lands within large settlements, as existing on date of policy, can remain. However, the expansion of footprint and vertical growth will be frozen as on date of policy notification. Even this will be an exception to state laws which will require an amendment

iv. Construction on empty private plots is not to be allowed from the date of policy notification.

2.13 **Accessibility** : Construction of bridges to the islands from the banks is not to be permitted except in the case of islands with major existing settlements. In the rare case that an island has to be used for bridging, no loop from the bridge would provide access to the island, Post construction eco-restoration of disturbed areas must be carried out immediately.

2.14 **River Ganga (Rejuvenation, Protection and Management) Authorities Order, 2016** : The conditions to be observed for floodplains, laid out in this far-reaching order, can be said to implicitly apply to river islands. However, as the Order fails to explicitly use the word river islands a lacuna exists which can be exploited through legal wordplay. Accordingly, the Order may be amended to include its application to river islands. Permission to facilitate eco-tourism by permitting temporary construction on islands in urban reaches of the river will require amendment in the state laws.

2.15 Further, the Order does not refer to the conservation of the morphology of the floodplains, banks and islands. Here, it is observed that under the National Waterways Act, the requirements of navigation can be met by removal of any

obstruction in the channels. Such removal can affect both island and bank morphology. As the NWA is an Act of Parliament and thus above the Order in hierarchy and also predates the Order it may be said to command precedence over the Order. This situation, of course, applies to National Waterway I stretch only. However, as there are a large number of islands this anomaly needs to be addressed by MoJS and the Ministry of Shipping & Transport.

2.16 **State Laws** : The states of Bihar and Bengal have modified the Bengal Alluvion Diluvian Act several times to accommodate newer political concerns. Jharkhand with a single District [Sahibganj] has not made any changes. Uttarakhand has also come up with two overlapping regulations. The UP Regulations have no specific allusion to river islands and thus lack clarity. All these laws need to be unified to be internally consistent within a state, consistent across states and with the national laws. Permission to facilitate eco-tourism by permitting temporary construction on islands in urban reaches of the river will require amendment in the state laws.

2.17 **Wildlife Protection Act** : The Act applies to river sanctuaries such as Vikramshila Dolphin Sanctuary. Large-scale navigational activities with high tonnage and draft motorized vessels create adverse impacts unacceptable under WPA. Any alteration of river islands in the Sanctuary would also impact several habitats. The solution may lie in the size of boats which may be laid down to be able to navigate the existing channels without modification.

2.18 **EIA Notification, 2006** : While the EIA requirements are not applicable to waterways the same can be applicable to any developments on river islands and in and around wildlife sanctuaries. This mention here is only to draw the attention of stakeholders who intend such developments or regulators who are empowered to carry out EIAs and subsequent monitoring of environmental plans and may be mentioned as such in the final policy.

2.19 **National Waterways Act, 1982** : This is again a call attention statement which may find mention in the policy so that actions under this Act are aligned with the

conditionalities of other laws, national or state level. Apart from the River Ganga Order conditionalities even tenures on islands call for compensation if islands are modified.

- 2.20 **Indian Forest Act (IFA), 1927** provides for the constitution and management of forests. In the instances where the River Islands fall within the notified limits of a Reserved Forest or a Protected Forests (RF/PF) or any other category of forests as per the State Rules (State adaptation of IFA and the Rules exist and vary from State to State), the IFA, 1927 would apply. In all such instances, the River Islands would be administered and managed by the State Forest Departments. The policy should draw attention to the relevance of this Act in some cases.
- 2.21 **Biological Diversity Act** : In case of thickly wooded islands with rich resources this Act may come into play and may accordingly be noted in the proposed policy.
- 2.22 **Coastal Regulation Zone Notifications** : These would come into play in the case of the estuarine islands and may be mentioned in the proposed policy for compliance in relevant cases.

LEGAL FRAMEWORK ANALYSIS MATRIX

SR. NO.	ACT, POLICY, ORDER OR REGULATION	RELEVANT PROVISIONS	DETAILED PROVISION	KEY ELEMENTS OF THE ACT/POLICY/PLAN/LAW/ORDER
I.	National Laws and Regulations Applicable to River Islands			
1.	Constitution of India, 1950	<p>Articles 48A, 51A (g), Article 246, Article 253</p> <p>Article 262: Role of the Union Government in adjudicating inter-state water disputes</p> <p>Entry 56 (List-I) of the Seventh Scheduled</p> <p>Entry 17 (List-II) of the Seventh Scheduled.</p>	<p>Article 48A: The State shall endeavor to protect the environment. It also emphasizes on safeguarding the forests and wildlife of the country. Article 48A imposes a duty on State to protect the environment from pollution by adopting various measures.</p> <p>Article 51A (g): It shall be the duty of each and every citizen of India to protect and improve the natural environment that includes lakes, rivers, forests, and wildlife.</p> <p>Article 246: Subject-matter of laws made by Parliament and by the Legislatures of States.</p> <p>Article: 248: Residuary Power of Legislation - (1) Subject to article 246A, Parliament] has exclusive power to make any law with respect to any matter not enumerated in the Concurrent List or State List.</p>	<p>There are three sets of provisions relevant to River Islands under the Constitution</p> <p>i) Provisions on the law-making powers of the union and the state governments including on natural resources enumerated under the Lists provided under the Constitution. This includes Residuary Powers of the Central Government</p> <p>ii) Provisions on obligation of the government and duty of the citizens for the protection and improvement of the natural environment including rivers</p> <p>iii) Provisions on River Disputes, Development of Rivers and River Valleys, Waterways and water</p> <p>All the three sets of constitutional provisions apply to river islands. The law-making powers of the Union and state governments with respect to river islands get reflected in the state level policies and Acts wherein state governments have legislated from the land ownership, use and revenue perspective. The central level legislation on environment, forest, biodiversity and wildlife are also applicable. Thus, the central</p>

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			<p>Article 253: Legislation for giving effect to international agreements</p> <p>Article 262: Constitution of India 1950</p> <p>(1) Parliament may by law provide for the adjudication of any dispute or complaint with respect to the use, distribution or control of the waters of, or in, any inter-State River or river valley.</p>	<p>government has not issued a legislation directly except those pertaining to environment. The law on national waterways is an instance of a central legislation issued as per the law-making powers of the Union under the Seventh Schedule that has direct bearing on river islands. In this respect, the principle of residual legislation will have to be carefully examined for the river islands having longer or permanent presence. Another pertinent area of analysis is the inter-state jurisdiction and coordination for the management of river islands. In case of pollution aspects, the law provides for the establishment of Joint Boards, a less explored provision under the Water Act, 1974. However, there are other issues of revenue, land assessment, rights and ownership to be determined based on a state's/Districts claim to the river islands.</p>
2.	Environment Protection Act 1986	Section 3, Section 5	Powers to undertake measures for prevention of environment pollution including restriction of areas and laying down of rules and standards for the protection of environment.	The EPA, 1986 is an overarching law that is applicable to all the ecosystems, including rivers and lands and has been used to issue Notifications including the Ganga River Basin Authority Notification of 2009 and the Notification on environmental flows 2018. Irrespective of the ownership and the existing management regimes, the EPA will be applicable to the River Islands, specially from the water quality standards and other pollution aspect perspectives. The regulation of operations and processes within the River Islands will need to carefully examined for the

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				<p>regulation under the EPA. However, the NRGBA has the powers conferred upon to regulate activities in the entire Ganga Basin. The role of EPA would become clear once the legal status of river islands is fully ascertained. Importantly, the EPA provides for the Environment Impact Assessment under the Notification of 2006. There is no mention of EIA in case of development in a river island or development activities that have direct impact on ecological features of rivers such islands. However, the 2016 amendment to the EIA Notification has exempted dredging from the Environment Clearance process. However, the cumulative impact assessment of all the river islands on the river regime could be sought under the EPA. This is thus a grey area in law This needs to be examined more carefully.</p>
3.	Wildlife (Protection) Act 1972	Several provisions including section 18, 36A, 36B, 36C and others	Declaration protection and control of sanctuaries, designation of community reserves	<p>Some of the River Islands in the Ganga Basin are designated Protected Areas. The wildlife in the Ganga basin is protected under the WLPA, 1972. The River Islands will have the application of WLPA including for the purposes of designation of community reserves, conservation reserves and sanctuaries, if the conservation regime is to be enhanced. Some of the islands are already under the Protected Area Regime.</p>

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4.	Water (Prevention and Control of Pollution) Act 1974	Chapter V of the Act	Chapter V provides for substantive as well as procedural details on the powers of the state governments to take samples and information, prohibition on the use of streams or well, restrictions on discharges	Water (Prevention and Control of Pollution) Act, 1974 is mainly concerned with the source pollution into water bodies. The pollution from within the river islands is likely to have severe impacts on river quality and hence the Water Act will apply. The cultivation carried out within river islands, use of water from the river channel, the habitations within and discharge of pollutants will attract the Water Act, 1974. The State Pollution Control Boards are required to look into the polluting activities within the river islands, the water quality in the stretches of the rivers with habituated islands and the source discharges, if any.
5.	Indian Forest Act, 1927	Chapter IV and V, among other provisions	Chapter II deals with Reserved Forests. Chapter IV deals with the Protected Forests, In PFs all activities are allowed unless specifically prohibited. Chapter V concerns protection of forests not being the property of the government i.e protection of forests for special purposes, on the request of the owners etc	The IFA, 1927 provides for the constitution and management of forests. In the instances where the River Islands are already part of RF/PF or any other category of forests as per the state Rules (state adaptation of IFA and the Rules exist and vary slightly from state to state), the IFA would apply. In all such instances, the River Islands would be administered and managed by the State Forest Departments. That does not negate the role of the water resources, irrigation or PCBs. The rights and concessions of people living in the forests and the activities therein would be

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				regulated as per the forest Act and the Rules. Further, the forestry and agro-forestry schemes can be also be implemented on river islands as per the IFA.
6.	Forest (Conservation Act), 1980	All the provisions	The FCA, 1980 deals with the diversion of forest lands for non-forest purposes.	The Act slows down the rate of diversion of forests for non-forest purposes. In case of River Islands, it needs to be seen if these have been designated as RF/PF/PA. The application of FCA would entail protection from diversion and conservation of these islands as forests, if they have been recorded as such. The definition of forests as per the dictionary meaning as has been Ruled in the WP (C) 202/1995 TN Godavarman Case would also apply.
7.	Indian Fisheries Act, 1897	All the provisions	Section 2(3) The Act defines private waters as one where a person has exclusive right to fisheries including customary rights (Explanation to Section 2). Then there are provisions on the protection of fish from poisoning etc. and by express rules to be framed by the state government.	The Indian Fisheries Act has two implications for the river islands, the fishing communities living there or fishing around these islands. Firstly, the Act recognizes the right to fisheries in private waters which is private not only by the virtue of ownership but also existence of customary right to fishery in those waters. Second, the protection of fish can be ensured by the state government for regulating exploitation of fish diversity including a ban on fisheries for a maximum of two years and regulation of fish nets or engines of any sizes. The law has negligible penal provisions such as a

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				penalty of 100 Rs for the first offence and 10 Rs for continuation of offence which render it ineffective. The measures for protection should relate to the erection and use of fixed engines, construction of weirs; and dimension and kind of the nets to be used and the modes of using them. This act assumes importance for livelihood issues on river islands.
8.	Biological Diversity Act, 2002	All the provisions	The BD Act, 2002 does not provide specifically for the aquatic biodiversity but covers all kinds of biological resources and diversity – terrestrial-aquatic and marine. Section 23 provides for the functions of the state government, Section 24 provides the powers of the State Biodiversity Board to prohibit or restrict activities that violate the objectives of conservation of biodiversity. Section 36 provides duties of the Central Government that has a wide scope and potential for conservation of River Islands.	River islands represent a combination of terrestrial and riverine biodiversity. The BD Act, 2002 applies to river islands and could be used to its potential for example for the creation of Biodiversity Heritage Sites. Similarly, the powers of the state and the Central Government for preventing activities that have negative impact on biological diversity could be put to use. The Act covers conservation, use of biological resources and associated knowledge for commercial or research purposes or for the purposes of bio-survey and bio-utilization. It provides a framework for access to biological resources and sharing the benefits arising out of such access and use.
9.	National Environmental Policy (NEP)	All the provisions of the policy	The pertinent clause is with respect to the Incomparable Entities and Entities with Incomparable Values	Policy defines the basic principles of environmental conservation and management emphasizes need for priority allocation of societal

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	2006		(Clause 4: Principles)	resources for conservation of Entities of Incomparable Value (EIV), both natural and man-made, which may impact the well-being, broadly conceived, of a large number of persons. The NEP defines ‘Entities of Incomparable Values’ (EVI) as sites containing unique natural or man-made entities, (living and/or non-living), that provide critical life support environmental services and/or are essential for the well-being, broadly conceived, of a large number of people of present and future generations. The NEP argues for the mechanisms and processes to be set up for preserving the entities of incomparable values and calls for a separate code in this regard. The riverine islands can be considered as EIV and such needs recognition and conservation.
10.	Sustainable sand mining management guidelines, 2016			The extraction of sand and gravel from the river bodies with adoption of required environmental safeguards is required to be done as per these guidelines. Sand mining has a significant impact over river islands and as such are of importance for them.
II.	State Level Frameworks			
(A)	UTTAR PRADESH			

SR. NO.	ACT, POLICY, ORDER OR REGULATION	RELEVANT PROVISIONS	DETAILED PROVISION	KEY ELEMENTS OF THE ACT/POLICY/PLAN/LAW/ORDER
11.	Revenue Department Manual of Orders, 1965 https://bor.up.nic.in/Act_And_Rules.htm	Rules on, “Assessment of Alluvial Mahals in Temporarily Settled Districts”	<p>An alluvial mahal means a mahal which has been demarcated and registered under these rules (Chapter I-A) as being liable to be affected by fluvial action.</p> <p>Alluvial means</p> <ul style="list-style-type: none"> (a) an actual increase in area caused by fluvial action ; (b) except as provided by paragraph A-61, an alluvial deposit which has enabled land that was previously barren to be brought under cultivation, or has increased the assessable sayar income of a mahal. <p>Diluvian means:</p> <ul style="list-style-type: none"> (a) an actual decrease in area caused by fluvial action ; or (b) a deposit of sand or other matter which has thrown land previously cultivated out of cultivation, or has diminished the letting value of cultivated land or the assessable sayar income of a mahal. <p>In case of Conditional long-term settlement, when there has been an</p>	<p>A Mahal under the UP-Land Revenue Code, 1950 is a local area held under a separate engagement for the payment of the land-revenue direct to Government. The essence of a Mahal is that it is considered as an special area with a separate arrangement for revenue collection and its ordinarily held as a commune by all the rights holders in a Mahal. An alluvial Mahal is one created by the river action where the area of alluvial deposit has increased resulting in income and revenue increment from such an area. A Diluvial Mahal is a result of decrease in area due to river action, either swept away partially or fully and added to another revenue district partly or fully. There are arrangements for revenue collection and settlement in different scenarios when alluvial or alluvial action happens. The reading of the law shows that the alluvial and diluvial Mahals are regarded as the legal categories for the purposes of revenue assessments and there are common property and livelihood rights. The Code, 1950 and the Orders issued therein provide for the areas that face alluvial/diluvian action in general. It is not specific to river islands but the provisions of the Code and the Orders are applicable to River</p>

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			<p>alluvial accretion to a mahal, and the cultivated area of such accretion amounts to more than ten per cent of the aggregate cultivated area of the mahal, as it stood at the time of the last assessment, and of the non-alluvial mahal, if any, owned by the proprietor in the same village, such alluvial accretion shall be liable to be assessed to revenue as a separate mahal under the rules relating to octennial settlements in this Chapter. No such assessment shall be made except in a year appointed for the assessment of the alluvial mahals of the pargana.</p> <p>Explanation—The term “alluvial accretion” in the above-mentioned paragraph and in paragraph A-16 includes not only the area actually added by fluvial action, but also the area which, at the time of the conditional settlement, was covered by the water of the river, but has since become dry through a change in the river-bed. It does not include land, barren at the time of such settlement which has been made culturable by subsequent changes in the riverbed.</p>	<p>Islands. Importantly, the Act does not use the word river islands and therefore no proximate definition of the term is available in Uttar Pradesh. A few specific points are as follows:</p> <ol style="list-style-type: none"> i. The alluvial mahals were considered for temporary settlements. ii. From the definitions, it can be inferred that alluvial and diluvian of an area was liable for revenue assessment. iii. In cases of conditional long-term settlement, the area which was barren at the time of settlement and had been made culturable by subsequent changes in the riverbed, was not considered for revenue assessment. The area which, at the time of the conditional settlement, was covered by the water of the river, but has since become dry through a change in the riverbed, was liable for revenue assessment. iv. In case of octennial settlement, the revenue was liable to re-assessed in case the area was reduced by diluvial action by more than 20 per cent below those accepted by the assessing officer

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			<p>An octennial settlement means a settlement of mahal demarcated as an alluvial mahal in which the revenue is liable to be re-assessed under section 96 of the United Provinces Land Revenue Act, 1901.</p> <p>(a) in the years appointed for the settlement of alluvial mahals in the pargana, or</p> <p>(b) in any year on application being presented by the proprietor to the Collector before December 15, claiming that the assets of the mahal have been reduced in consequence of diluvian by more than 20 per cent below those accepted by the assessing officer at the current settlement of the mahal.</p> <p>Chapter II, Para 18 states that, owing to a change in the deep stream of a river, part of a mahal is cut off from one district and becomes included in the boundaries of another district, the whole of the revenue of the mahal will continue to be paid in the district in which it has previously been paid, until the whole mahal, or in the case of a</p>	<p>at the current settlement of the mahal.</p> <p>v. Rule 1623 and Rule 1624, talks about changes caused in localities due to “deep stream” would not affect the compensation as decided by the government and will be payable by treasury of one collector. However if most of the area or the complete area is transferred from district of one collector to another, then there are two conditions that needs to be satisfied:</p> <ul style="list-style-type: none"> • the fard of the area (which is transferred by the river to another district), for the purpose of revenue tax, is registered in that district; and • there is a possibility of the owner of that area, to reside in that district <p>then, for the purpose of convenience, the fard, for the purpose of revenue tax would be added in the registry of that collector where the full area or most of the area is carried by the river into another district after the approval of both Bihar and U.P. government who would be approve such transition. And those villages whose land revenue is determined separately or are part of complex mahal and their land revenue is determined</p>

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			<p>mahal consisting of two or more villages with land revenue separately assessed or distributed on each village, until the whole village comprising the area is cut off, eg transferred to the other district under the orders of Government.</p> <p>No mahal will be so transferred unless by the deep stream rule, the village site is removed from one district to another. Where the two districts are under different Governments, the sanction of both the Governments will be necessary to the transfer and the rules in paragraphs 1623 and 1624.</p>	<p>separately, then after the approval of U.P. and Bihar Government would be, added as one State, if these villages are cut-off by the river from the district and the names of the villagers are on the areas which are cut-off and these villagers are inclined to reside in that district.</p>
(B)	UTTARAKHAND			
12.	The Uttaranchal (The U.P. Zamindari Abolition Land Reforms Act, 1950) (Adaptation and Modification Order, 2001) (Amendment) Act 2003".		<p>i. "Flood Plain" includes water channel, flood channel and that area of nearly low and which is susceptible to flood by inundation;</p> <p>ii. "Land" includes interest in lands, benefits arising out of lands and things attached to the earth or permanently fastened to anything attached to the earth;</p>	<p>The Uttaranchal Amendment Act. 2003 (Further amended 2006) provides for the transfer of a 'fragment'. A Fragment is a piece of land admeasuring roughly about 3 acres. The sale, purchase and revenue to be levied on the fragments is to be further determined as per the Revenue Code. There is no reference to river island under this law. Thus it can be inferred that the legal position in Uttarakhand with respect to river islands or fragments that emerge due river action is not very clear.</p>

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	Uttarakhand Flood Plain Zoning Act, 2012 (https://www.indiacode.nic.in/handle/123456789/3423?view_type=search&sam_handle=123456789/2511)		iii. “River” includes its tributaries; iv. “Water Channel” means the channel in which the flows of a river are generally confined.	The UFPZ, 2012 is a new legislation with a potential application to River Islands that adjoin flood plain areas that could notified as such by the Authority constituted for such purpose. There is a provision for compensating the occupants of lands susceptible to floods based on the survey of the land by an authorized officer. The details of the survey and the coverage could be only known through further verification. A few pertinent aspects of the Flood Plain Zone Act are as follows: i. The Act states that under section 5 survey would be conducted by the Flood Zoning Authority to identify flood plains (the area which is susceptible to flood, as per the definition) and prior notice shall be given to the occupier of the land. ii. However, section 7 states that any officer or Flood Zoning Authority who enters the land under section 5 shall, before leaving, tender compensation to the owner or occupier of such land for any damage which may have been caused and in case of dispute as to the sufficiency of the amount so tendered, the Flood Zoning Authority or such officer shall refer the matter to the State Government for its decision. iii. It may be concluded that compensation would

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				<p>only be provided when the damage is caused to the occupier's land, building or the structure.</p> <p>iv. Furthermore, the State Government after the report of the Flood Zoning Authority may alter the limits of area as it considers necessary and shall make arrangement for rehabilitation of Colonies already existing in the flood plain.</p> <p>v. The state government may restrict and prohibit activities in the flood plains after declaring the areas.</p> <p>vi. Where any permission to undertake any activity in the flood plain has been refused to any person or where as a result of prohibition or restriction imposed on any person under this Act, such person suffers any damage, he shall be entitled to the payment of compensation not exceeding the difference between the value of the land as determined under section 23 or section 24 of the Land Acquisition Act, 1894 (Central Act No. 01 of 1894) and the value which it would have, had the permission for carrying on any activity had been granted or the prohibition or restriction had not been imposed.</p> <p>vii. It can be concluded that compensation can be received in two circumstances i.e., when the land, building, structure of the occupier has been damaged due to flood and any person who suffers damage as a result of prohibition</p>

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				<p>or restriction imposed in the flood plain area.</p> <p>viii. In determining the amount of compensation, any restriction to which the land is subjected to under any other law for the time being in force in regard to the right of the person claiming compensation to carry on any activity on the land or otherwise to the use of the land, shall be taken into consideration.</p> <p>ix. Compensation shall be determined by agreement between the persons and the authority and shall not exceed Rs. 10,000. If exceeds the limit of Rs. 10,000 then the compensation shall only be provided after the State Government's approval.</p>
(C)	JHARKHAND			
13.	<p>Land Registration Act, 1876 (Bengal Act 7 of 1876)</p> <p>http://www.bareactslive.com/WB/WB438.HTM#:~:text=An%20Act%20to%20provide%20for,the%20proprietors%20and%2</p>	Section 2 of the Act	<p>i. “Estate” includes-</p> <p>(a) any land subject to the payment of land-revenue, either immediately or prospectively, for the discharge of which a separate engagement has been entered into with [the Government] ;</p> <p>(b) any land which is entered on the revenue-roll as separately assessed with land-revenue (whether the amount of such</p>	<p>In Jharkhand, the state legislation on land revenue provides for the registration of lands for the purposes of determining land revenue. The law creates an exception of certain lands to be registered as revenue free lands or lands that are exempt from land revenue. What appears from the legislation is that in Jharkhand revenue land is recognized as an estate or a Mauza and there is a third category of revenue free lands with proprietary rights. The implication of this legislation on river islands is that revenue collection is not a mandatory condition for a legal categorization of lands in a situation where a state has exempted certain</p>

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	0managers%20the reof.&text=as%20 follows%3A%2D-1.,the%20Land%20Registration%20Act%2C%201876.)		<p>assessment be payable immediately or prospectively), although no engagement has been entered into with [the Government] for the amount of revenue so separately assessed upon it as a whole;</p> <p>(c) any land being the property of [the Government] of which the Board shall have directed the separate entry on the general register hereinafter mentioned [or on any other register prescribed for the purpose by rule made under this Act]</p> <p>ii. “Mauza” means the area defined, surveyed and recorded as a distinct and separate mauza in</p> <p>(a) the general land-revenue survey which has been made of the [State] or</p> <p>(b) any survey made [by any Government] which may be adopted [by the State Government] by notification in the [Official Gazette] , as defining mauzas for the</p>	<p>special categories of lands to be recorded even without being the revenue categories. There is no category as river island under the Act. The specific sections have been outlined below:</p> <p>i. Section 9 talks about Register for revenue free lands. Register shall contain three parts: Part I. - Book of lands held exempt from revenue in perpetuity. Part II. - Book of lands occupied for public purposes without payment of revenue. Part III. - Book of unassessed waste-lands and other lands not included in Part I or Part II of the general register of revenue-free lands.</p> <p>ii. Section 15 talks about “Mauzawar register to be arranged according to local divisions.” Among other requirements, the rester shall contain name of every estate or revenue-free property to which any of the lands of the mauza appertain.</p> <p>iii. Section 19 talks about Intermediate Register which shall record all changes in the names of proprietors and managers of revenue-free properties, and in the character and extent of interest of each such proprietor and manager,</p>

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			<p>purposes of this clause in any specified area; and, where a survey has not been [so made or adopted by the State Government], such area as the Collector may, with the sanction of the Board of Revenue, by general or special order, declare to constitute a mauza</p> <p>iii. “Manager” means every person who is appointed by the Collector, the Court of Wards or by any Civil or Criminal Court to manage any estate or revenue-free property or any part thereof, and every person who is in charge of an estate or revenue free property or any part thereof on behalf of a minor, idiot or lunatic, or on behalf of a religious or charitable foundation [or as a trustee or executor]</p> <p>iv. “Proprietor” means every person being in possession of an estate or revenue-free property, or of any interest in an estate or revenue-free property, as owner</p>	<p>and such other changes affecting any entry standing in the general register of revenue-free lands, or any entry relating to revenue-free lands in the mauzawar register, as cannot conveniently be entered against such entry in the general or the mauzawar register. It shall also include “particulars of the change, with a reference to the authority under which it is made.”</p> <p>iv. Intermediate register shall record changes in the names of proprietors and managers of revenue free properties with a reference to the authority under which it is made.</p> <p>v. Section 33 talks about “Lands held without payment of rent deemed to be part of certain estates”. It states that all lands which are held without payment of rent, not being a revenue-free property entered in the general register of revenue-free lands be deemed to be a part of the estate within the local boundaries of which they are included; and, if they are not included within the local boundaries of any one estate, then to be a part of such neighbouring estate as the Collector shall, by an order under his seal and signature, declare.</p> <p>vi. Conclusion: There are revenue free lands as well as lands which are not revenue-free but are held without payment of rent. Such lands would be deemed to be an “Estate”.</p>

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			<p>thereof; and includes every farmer and lessee who holds an estate or revenue-free property directly from or under the Collector</p> <p>v. “Revenue-free property” means any land not subject to the payment of land-revenue which is included under one entry in any part of the general register of revenue-free lands</p>	<p>vii. Section 42 provides proprietary right in any estate or revenue-free property, whether by purchase, inheritance, gift or otherwise.</p>
14.	<p>The Chota Nagpur Tenancy Act, 1908</p> <p>https://www.indiacode.nic.in/bitstream/123456789/12213/1/30-1950_revenue.pdf#search=Chota%20Nagpur%20Tenancy%20Act,%201908</p>		<p>i. “estate” means land included under one entry in any of the general registers of revenue-paying lands and revenue-free lands prepared and maintained under the law for the time being in force by the Deputy Commissioner; and includes Government ‘khas mahals’ and revenue-free lands not entered in any register</p> <p>ii. “holding” means a parcel or parcels of land held by a Raiyat, and forming the subject of separate tenancy;</p> <p>iii. “korkad” means land by whatever name locally known such as ‘bahala khandwat’, ‘jalsasan’ or ‘ariat’, which has been artificially</p>	<p>The Tenancy law in Jharkhand does not have any particular reference to tenancy in the lands emerging of lost due to river action. Nor it deals with tenancy in River Islands that exist in the state. Rather the law deals with the process and accrual of tenancy rights created in a land.</p> <p>i. Section 14 of the act states that upon the resumption of a resumable tenure, every lien, sub-tenancy, easement or other right or interest created, without the consent or permission of the grantor or his successor-in-interest by the grantee or any of his successors, on the tenure, or in limitation of his own interest therein, shall be deemed to be annulled, except <i>“Any Mundari khunt-kattidari tenancy”</i></p> <p>ii. Section 18 talks about “Bhuinhars and Mundari khunt-kattidars to be settled Raiyats</p>

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			<p>levelled or embanked primarily for the cultivation of rice, and,- (a) which previously was jungle, waste or uncultivated, or was cultivated upland, or which, though previously cultivated, has become unfit for the cultivation of transplanted rice, and</p> <p>(b) which has been prepared for cultivation by a cultivator (other than the landlord), or by the predecessor-in-interest (other than the landlord);</p> <p>iv. “Raiyat” means primarily a person who has acquired a right to hold land for the purpose of cultivating it by himself or by members of his family, or by hired servants or with the aid of partners; and includes the successor-in-interest of persons who have acquired such a right, but does not include a Mundari-khunt-kattidar.</p> <p>Explanation. - Where a tenant of land has the right to bring it under cultivation, he shall be deemed to have acquired a right to hold it for the purpose of cultivation,</p>	<p>in certain cases”. And includes all male members of Mundari Khunt Khatedari who hold such land and have been holding the land continuously for twelve years.</p> <p>iii. Under chapter XVIII, which includes special provisions regarding Mundari Khunt Khatedars, section 241 states that such land can be transferred without the consent of the landlord for any charitable, religious or educational purpose or for the purposes of manufacture or irrigation, or as building ground for any such purpose, or for access to land used or required for any such purpose.</p> <p>iv. Section 256 states that record of rights must be published to prove Mundari Khunt Khattidari.</p> <p>v. The act does not talk about korkad land</p>

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			<p>notwithstanding that he uses it for the purpose of gathering the produce of it or of grazing cattle on it.</p> <p>(2) A person shall not be deemed to be a Raiyat unless he holds land either immediately under a proprietor or immediately under a tenure-holder or immediately under a Mundari-khunt-kattidar.</p> <p>(3) In determining whether a tenant is a tenure-holder or Raiyat, the Court shall have regard to,-</p> <p>(a) local custom, and</p> <p>(b) the purpose for which the right of tenancy was originally acquired.</p> <p>v. “Raiyat having khunt-katti rights”</p> <p>(1) “Raiyat having khunt-katti rights” means a Raiyat in occupation of, or having any subsisting title to land reclaimed from jungle by the original founders of the village or their descendants in the male line, when such Raiyat is a member of family which founded the village or a descendant in the male line of any member of such family :</p>	

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			<p>Provided that no Raiyat shall be deemed to have khunt-katti rights in any land unless he and all his predecessors-in-title have held such land or obtained a title thereby virtue of inheritance from the original founders of the village.</p> <p>(2) Nothing in this Act shall prejudicially affect the rights of any person who has lawfully acquired a title to a khunt-kattidari tenancy before the commencement of this Act.</p> <p>vi. “Mundari-khunt-kattidari” Mundari- khunt-kattidar means a Mundari, who has acquired a right to hold jungle land for the purpose of bringing suitable portions thereof under cultivation by himself or by male members of his family, and includes,-</p> <p>(a) the heirs male in the male line of any such Mundari when they are in possession of such land or have any subsisting title thereto, and</p> <p>(b) as regards any portions of such land which has remained continuously in the possession of any such Mundari</p>	

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			and his descendants in the male line, such descendants.	
15.	Bihar Land Reforms Act, 1950		<p>i. “Estate” means any land and several fishery and ferry rights included under one entry in any of the general registers of revenue-paying lands and revenue-free lands, prepared and maintained under the law for the time being in force by the Collector of a district, and includes revenue-free land and several fishery and ferry rights not entered into any register and a share in or of an estate.</p> <p>ii. “Khas possession” used with reference to the possession of a proprietor or tenure-holder of any land used for agricultural or horticultural purposes means the possession of such proprietor or tenure-holder by cultivating such land or carrying on horticultural operations thereon himself with his own stock or by his own servants or by hired labour or with hired stock.</p>	<p>In Bihar, An Estate can be vested in the state government meaning that any land can be vested in the state by way of a Notification issued under the Bihar Land Reforms Act, 1950. The Act defines an Estate to include any land whether revenue-paying or revenue free. Thus, rights in the lands in river islands including the ferry and fishery rights can be vested in the state government by way of a Notification. The specific details of the provisions on this aspect are as follows:</p> <p>i. Tenure’ excludes Mundari Khunt Khattidari.</p> <p>ii. As per section 3, State by notification can vest an estate(revenue paying and revenue free in the State.</p> <p>iii. Section 4, states that, as a consequence of vesting, interests of the proprietor or tenure-holder in any building or part of a building comprised in such estate or tenure and used primarily as office or cutchery for the collection of rent of such estate or tenure, and his interests in trees, forests, fisheries, jalkars, hats, bazars, [mela] and ferries and all other sairati interests, as also his interest in all subsoil including any rights in mines and</p>

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				<p>minerals whether discovered or undiscovered, or whether been worked or not, inclusive of such rights of a lessee of mines and minerals, comprised in such estate or tenure (other than the interests of raiyats or under raiyats) shall, with effect from the date of vesting, vest absolutely in the State free from all incumbrances.</p>
16.	<p>Bihar Government Estate (Khas Mahal) Manual, 1953</p> <p>http://www.bareactslive.com/BIH/BH282.HTM</p>		<p>“Government Estates” is used to mean estates under the direct management of Government whether these are the property of Government or are the estates of private individuals brought under direct management of Government. It may also mean any land, which is the property of Government and as such would include estates owned by Government which have been let in farm and leased for periods and also the waste lands but would not include lands belonging to other departments of Government, e.g. roadside lands, so long as they are not relinquished by the department concerned to the Collector for management. This Manual unless it so appears from the context, deals with the principles, policy and procedure for khas management of estates under the</p>	<p>The Manual provides the Rules for the acquisition of Estates that are under the direct management of the state government. Importantly, ownership is not the premise for such management. The state government can also assume the management of estates under private ownership. The manner in which Government Estates (Khas-Mahal) can be acquired includes “Resumption of Island Chars” Thus the Rules for the acquisition of government lands applicable in Jharkhand, Bihar and West Bengal flow from the Regulation XI of 1825 and are applicable to river islands. In addition to the 1825 Regulation, the Manual, 1953 provides the powers and the procedure for the acquisition of what is termed as ‘Island Chars’ that is a combination of a formal and customary term. These estates are also referred to as Diara. The Policy of the government for such lands is to manage them directly under the government supervision.</p> <p>The Island Chars or Diara Lands can also be leased by</p>

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			direct management of Government.	<p>the Government. This lease is based on a form of acceptance known as Kabuliayt on behalf of the lessor. The Diara estates are also required to be assessed annually after the rains for the alluvion or dilluvion action by an officer not below the rank of a Circle Inspector. The observation by the officer should be marked on the previous year's map prepared by an Amin (a land officer) on all the changes occurred in the Diara estates. The map so updated by following this process should be relied upon solely for settlements and remissions etc. The detailed procedure for the annual verification of Diara estates has been provided under the Manual.</p> <p>What emerges from the Manual 1953 along with the Regulation XI of 1825 that the states have put a legal and procedural system for the annual mapping and assessment of the Island Chars or Diara Estates and its not left unattended. The extent of direct management by the state government and the regulation of activities in these lands for the purposes these have been leased or the land use contrary to what has been allowed under the Rules needs to be further ascertained to know the changing legal dynamics in these estates. The specific Rules under the Manual are outlined below:</p> <ul style="list-style-type: none"> • Rule 2 refers to acquisition of government estates via Regulation XI of 1825 • Rule 24 talks about lease of char or diara lands.

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				<p>Diara estates are liable to considerable changes annually from alluvion and diluvion. A responsible officer not below the rank of Sub-deputy Collector, or a Kanungo, [or Circle Inspector], should inquire on the spot after each rains and have marked on the previous year's map by an amin all changes due to alluvion and diluvion, including changes in classification of lands. This map should be relied on solely for settlements, remissions etc.</p> <ul style="list-style-type: none"> • Rule 33B provides for grant of fishing rights in river/tank/bandh
17.	Bihar Tenancy Act 1885		<p>Section 180 talks about char and diara lands and it states a raiyat will hold char or diara land for twelve continuous years and acquire right of occupancy, until then, the raiyat shall be liable to pay rent as decided between him and his land lord. It means that till twelve years the non-occupancy raiyat will be paying rent and then he will acquire the right of occupancy.</p>	<p>The Bihar Tenancy Act adds another dimension of tenancy to the Island Chars or Diara estates. As per this Act a Raiyat can have tenancy rights over such lands. Raiyat in the ordinary and simple sense of the term is a self-cultivator. The Act provides that a self cultivator can acquire right of occupancy of a Diara land if he has been holding the land for 12 continuous years and also has been paying the rent as agreed between him and the landlord. The right of occupancy will be acquired in the 12th year. The Tenancy in the Diara Lands can also be revoked by the Collector in case the cultivation is not feasible (Section 112, the Tenancy Act). The form and nature of tenancy and the counter claims disputing state's power to allocate Diara lands on the payment of rent needs further investigation and analysis.</p>

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(D)	BIHAR			
18.	The Bihar Chaur, Diara and Gang Barar Public Land Temporary Settlement Policy, 2013	All the provision of this policy	Several Policy Provision including 2(ii) and Provision 4 (v), (vii)	<p>The Chaur Diara Settlement Policy, 2013 represents the latest thinking on formalization of state’s policy for temporary settlement of public lands on the payment of revenue for short and fixed duration of five years. The Policy does not provide for the survey and the determination of rent for Diara lands settled in favour of marginalized groups in Bihar. The Policy provides that the land coming of the rivers that are arable will be redistributed for the purposes of agriculture by self-cultivation. The land is to be redistributed to the weaker sections of the society such as Mahadalits, Scheduled Castes and Scheduled Tribes, Other Backward Classes and the family of soldiers.</p> <p>As per the Policy, the land settled in favour of above-mentioned categories of beneficiaries is nontransferable but can devolve hereditarily during the period of settlement. In case the settled land gets submerged within a period of settlement (5 years in general), the settlement shall automatically stand cancelled and no claim can be made against the government.</p> <p>Notably, the Policy’s five-year period of resettlement runs contrary to the annual survey and assessment provisions provided in the Khas Mahal Manual, 1953 and the occupancy rights under the Bihar Tenancy Act,</p>

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				1885 as it necessitates land holding for twelve consecutive years for the occupancy rights.
19.	Maun/Chuar Development Schemes 2013-14			<p>The Bihar Government has also launched schemes for the development of Maun, Chaur and Diara areas for increasing the productivity in these areas. The schemes target increasing land productivity upto 200kg/ha/year and development of capture fisheries by supplying improved fingerlings at subsidized rate. These schemes indicate the organized interventions within the rivers at farms and fisheries with no mention of their impacts on river regimes.</p> <p>Similarly, another scheme called Mukhya Mantri Samekit Chaur Vikas Yojna, 2023 has been launched for the development of fisheries in Chaur</p> <p>(https://pmmodyojana.in/mukhyamantri-samekit-chaur-vikas-yojana/)</p>
20.	The Bihar Tenancy Act, 1885	Same as described under Jharkhand		
21.	The Bengal Alluvion and Diluvian Regulation, 1825 (Regulation 2 of 1825) and	All the provisions		A series of Regulations on Alluvion and Diluvian claims were issued before a provincial legislation came into being in 1847. The Regulation 2 gives guidance on the issue of state claim and jurisdiction over the river estates. The Regulation provides that the ‘Claims and disputes as to alluvial lands to be decided by usage when clearly recognized and established’, the main channel of the river dividing the estates shall be the constant boundary between them, whatever changes

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	(Bengal Regulation No. 11 of 1825)			<p>may take place in the course of the river, by encroachment on one side the accession on the other) the usage shall govern the decision of all claims and disputes relative to alluvial land between the parties whose estates may be liable to such usage.</p> <p>Regulation 4 talks about ‘When land may be gained by gradual accession, [whether] from the recess of a river [or of the sea]’, it shall be considered an increment to the tenure of the person to whose land or estate is thus annexed, whether such land or estate be held immediately from [Government] by a zamindar or other superior landholder, or as a subordinate tenure by any description of under-tenure whatever.</p> <p>However, the increment of land thus obtained shall not entitle the person in possession of the estate or tenure to which the land may be annexed to a right of property or permanent interest therein beyond that possessed by him in the estate or tenure to which the land may be annexed, and shall not in any case be understood to exempt the holder of it from the payment to the [Government] of any assessment for the public revenue to which it may be liable under [the provisions of Regulation II, 1819, or of any other Regulation in force.</p> <p>When a char or island may be thrown up in a large navigable river (the bed of which is not the property of</p>

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				<p>an individual) [or in the sea], and the channel of the river [or sea] between such island and the shore may not be fordable, it shall, according to established usage, be at the disposal of [Government].</p> <p>If the channel between such island and the shore be fordable at any season of the year, it shall be considered an accession to the land, tenure or tenures of the person or persons whose estate or estates may be most contiguous to it.</p> <p>Sand bank or char may be thrown up in small and shallow rivers, the right of the beds of which , lie with jalkar right of fishery, then the right of such thrown char and sand bank would also lie with the proprietor.</p> <p>In all cases of claims and disputes respecting land gained by alluvion, or by dereliction of river [or the sea], which are not specifically provided for by the rules contained in this Regulation, the Courts of Justice will then decide such claims and disputes by the best evidence they may be able to obtain or established local usage if there be any applicable to the case, or, if not, by general principles of equity and justice.</p> <p>Regulation 5 states that nothing in the ‘The Bengal Alluvion and Diluvion Regulation, 1825’ shall constitute encroachment neither it will prevent Government who may be duly empowered for that</p>

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				purpose, from removing obstacles which appear to interfere with the safe and customary navigation of such rivers, or which shall in any respects obstruct the passage of boats by tracking on the banks of such rivers, or otherwise.
22.	The Bengal Alluvion and Diluvian Act, 1847			The Act provides for the mapping and assessment of changes in the river estates due to alluvion and diluvian action. Section 5A. talks about ‘Assessment of land reformed on original site’. It states whenever any land which has been washed away from or lost to any estate paying revenue directly to Government re-appears above the water and reforms at the original site of such land, the proprietor of the estate from the sadar jama of which a deduction has been made under Section 5 on account of the land so washed away or lost, shall have the right to resume immediate possession of the land so reformed, subject to the payment of revenue in respect thereof, with effect from the date on which such revenue is assessed. Such revenue shall be assessed at the same rate as that obtaining for the sadar jama of the remainder of the estate on the date on which possession is so resumed, and shall bear to the sadar jama the same proportion as the area of the land so reformed bears to the areas of the remainder of the estate. This assessment with the reasons there of shall be forthwith reported by the local revenue-authorities for the information and orders of the Board of Revenue whose orders thereupon shall be final]. This provision was further explained in

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				functional terms under the Khas Mahal Manual, 1953 that provides the manner of assessment of such land by the Revenue Officer and Amin and the levying of revenue after such assessments.
23.	The Bengal Alluvial Land Settlement Act, 1858			This was enacted for the settlement of land gained by alluvion in the erstwhile Presidency of Fort William in Bengal.
(E)	WEST BENGAL			
24.	The Bengal Alluvion and Diluvion Regulation, 1825 (Bengal Regulation No. 11 of 1825)	Same as described under Bihar		
25.	The Bengal Alluvion and Diluvion Act, 1847	Same as described under Bihar		
26.	The Bengal Alluvial Land Settlement Act, 1858		N/A in India	This was enacted for the settlement of land gained by alluvion in the erstwhile Presidency of Fort William in Bengal.
27.	The West Bengal Land Reforms Act, 1955		i. "Land" means land of every description and includes tank, tank-fishery, fishery, homestead, or land used for the purpose of live-stock breeding, poultry farming, dairy or land comprised in tea garden, mill, factory, workshop, orchard, hat,	One of the important imports of this legislation on river estates is that if a Raiyat wishes to change the use of the land situated within a municipal corporation/municipality area and if the land involves a water body, the land use change of such a land is not permissible under the law. The specific provisions are as follows:

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			<p>buzar. Ferries, tolls or land having any other sairati interests, and any other land together with all interests and benefits arising out of land and things attached to the earth or permanently fastened to anything attached to earth.</p> <p>ii. “raiyat” means a person or an institution holding land for any purposes whatsoever.</p>	<p>i. Section 4B talks about ‘Maintenance and Preservation of Land’, and proviso of section 4(B) states that, provision of section 4(B) shall not apply to: ... <i>“the diminution in area or the change of character of any land or the conversion of any land for any purpose other than the purpose for which it was settled or previously held, in such diminution or change of character of any land or the conversion was made in accordance with the provisions of any law for the time being in force.”</i></p> <p>ii. Section 4 (c) talks about ‘Permission for change of area, character or use of land’. 4 (c) (1) states that A raiyat holding any land may apply to the Collector for Permission for change of area or character of such land or for conversion for any purpose other than the purpose for which it was settled or was being previously used or for alteration in the mode of use of such land. In 2000 amendment, Explanation to section 4C (1) was inserted which states: <i>“Explanation: -For the purposes of this sub-section, mode of use of land may be residential, commercial, industrial, agriculture excluding plantation of tea, pisciculture, forestry, sericulture, horticulture, public utilities or other use of land.”</i></p>

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				<p>iii. Section 25 was amended in 2000, and it states that revenue payable by raiyat may be altered by revenue officer if the land held by raiyat and his family has increased or decreased in area by diluvian, amalgamation....</p> <p>iv. In 2010 amendment of in section 4(C), sub-clause (6) was inserted which states: ... <i>“Notwithstanding anything contained in the foregoing provisions of this section, where any plot of land not exceeding 0.03 acre situated in the areas falling within the local limits of any Municipal Corporation or Municipality, or any plot of land not exceeding 0.08 acre situated in the area not falling within the local limits of any Municipal Corporation or Municipality, other than any plot of land having water body of any description or size, has been changed, converted or altered in the area, character or mode of use of such plot of land in violation of the provision of sub-section (2) of section 4C and if the State Government, on the basis of any report of the Collector, is of the opinion that it is necessary to do so in the public interest, the State Government may, by order, authorise the Collector to regularise such change, conversion or alteration in the area, character or mode of use of the said plot of land, other than any plot of land having</i></p>

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				<p><i>water body of any description or size, [on payment of such fee depending on the different character or mode of use or size of the plot of land,] and in such manner, as may be prescribed.]”</i></p> <p>It means that any ‘plot of land’ having a ‘waterbody’ cannot be regularized</p>
28.	West Bengal Estates Acquisition Act, 1953		<p>i. “Agricultural land” means land ordinarily used for purposes of agriculture or horticulture and includes such land, notwithstanding that it may be lying fallow for the time being.</p> <p>ii. “Estate” or “tenure” includes part of an estate or part of a tenure;</p> <p>iii. “Non-agricultural land” means land other than agricultural land [or other than land comprised in a forest];</p> <p>iv. “homestead” means a dwelling house together with—any courtyard, compound, garden, out-house, place of worship, family grave-yard, library, office, guest-house, tanks, wells, privies, latrines, drains and boundary walls annexed to or appertaining to such dwelling house</p>	<p>This legislation allows the state government to acquire a privately held estate by way of Notification that provides for the assessment of compensation for such purpose.</p> <p>i. Section 5(aa), talks about ‘effect of notification of vesting of estate in State’. It states that all lands in any estate comprised in a forest together with all rights to the trees therein or to the produce thereof and held by an intermediary or any other person shall vest in the State.</p> <p>ii. Section 6 talks about Right of intermediary to retain certain lands, such as:</p> <ul style="list-style-type: none"> • an intermediary can hold agricultural land in his Khas possession, not exceeding twenty-five acres in area, as may be chosen by him: Provided that in such portions of the district of Darjeeling as may be declared by notification by the State Government to be hilly portions, an

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				<p>intermediary shall be entitled to retain all agricultural land in his Khas possession, or any part thereof as may be chosen by him</p> <ul style="list-style-type: none"> • Tank fishery' means a reservoir or place for the storage of water, whether formed naturally or by excavation or by construction of embankments, which is being used for pisciculture or for fishing, together with the sub-soil and the banks of such reservoir or place, except such portion of the banks as are included in a homestead or in a garden or orchard and includes any right of pisciculture or fishing in such reservoir or place • where the intermediary is a corporation or an institution established exclusively for a religious or a charitable purpose or both, or is a person holding under a trust or an endowment or other legal obligation exclusively for a purpose which is charitable or religious or both—land held in <i>Khas</i> by such corporation or institution, or person, for such purpose [including land held by any person, not being a tenant, by leave or license of such Corporation or institution or person • so much of requisitioned land as the intermediary would be entitled to retain after taking into consideration any other

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				<p>land which he may have retained under the other clauses;</p> <ul style="list-style-type: none"> • Explanation.—‘Requisitioned land’ means any land which was in the Khas possession of the intermediary and which was requisitioned by Government under the provisions of any law for the time being in force or was occupied by Government in pursuance of rule 49 of the Defence of India Rules and continued to be subject to requisition or occupation on the date mentioned in the notification issued under section 4; • so much of land in the unauthorised occupation of refugees from East Bengal immediately before the date of vesting as an intermediary would be entitled to retain after taking into consideration any other land which he may have retained under the other clauses; • <i>Explanation.</i> —‘Refugees from East Bengal’ includes those who are displaced persons within the meaning of the Rehabilitation of Displaced Persons and Eviction of Persons in Unauthorised Occupation of Land Act, 1951 (West Bengal Act No. 16 of 1951) • <i>Exception.</i> — [Subject to the provisions contained in sub-section (3), nothing in this

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				<p>sub-section] shall entitle an intermediary [or any other person] to retain any land comprised in a forest [or any land comprised in any embankment as defined in the Bengal Embankment Act, 1882 (Bengal Act No. 2 of 1882), the proper maintenance of which should, in the opinion of the State Government, be taken over by the State Government in the public interest]</p> <p>It can be concluded that exception to (3) allows forest land to be utilized for tea-garden after State Government's approval. However, it can be interpreted that <i>“any land comprised in any embankment as defined in the Bengal Embankment Act, 1882 (Bengal Act No. 2 of 1882), the proper maintenance of which should, in the opinion of the State Government, be taken over by the State Government in the public interest”</i> is still not permissible via any exception to exception.</p> <p>Section 6(4) states that in the case of lands comprised in a forest [or in any embankment, referred in the Exception to sub-section (1)] and held by a person other than an intermediary which vest in the State, such person shall, for the purpose of assessment of compensation, be deemed to be an intermediary.</p>

2.23 **Areas of Focus (Natural Resource & Livelihoods) :**

- ❖ **Vegetation & Biodiversity:** Most of the non-urban islands which have their native biodiversity intact will be protected in the same form and expansion of cultivated zones will not be further permitted in order to maintain their biodiversity habitat and other ecosystem services. In larger islands with human settlements, identification of barren lands is to be done for carrying out afforestation activities so as to prevent erosion and enhance carbon sequestration along with biodiversity benefits.
- ❖ **Island Agriculture :** Permaculture practices are to be promoted on cultivated areas of the river islands so as to eliminate chemical inputs and promote agro-ecology.
- ❖ **Livelihood Activities on the Island :** All river islands will be inventoried and mapped. Further clearance of lands for cultivation is to be prohibited. Regulations are to be formulated with respect to bioresource collection such as wood, grasses and wild fruits from the islands.

2.24 **Key risks and Mitigation strategies :**

- **Island erosion** – Erosion of riverine islands is a major issue as observed on Raghapur *Diara* along with other islands. The most environment-friendly approach to this challenge is stabilizing the island banks with riparian grass, especially *Saccharum* sps. and other native riparian vegetation. Not only do these provide long-term bank stability but also support native biodiversity and enhance climate resilience.
- **Criminal activities on riverine islands** – Due to their separation from the mainland, several islands especially in parts of Bihar and Jharkhand are known to be hubs of criminal activities which often are difficult to tackle owing to

accessibility and jurisdiction issues. In order to deal with this situation, it is imperative to develop the concept of 'River Police' that can be equipped with ways and means of dealing with such situations and having their authority over the entire river stretch including the islands.

- 2.25 **Monitoring and Implementation :** National Mission for Clean Ganga (NMCG) can be the nodal body for developing and implementing riverine island policy. Any activity concerning the riverine islands and sandbars would need prior approval from them. The State Ganga Committees in conjunction with the concerned District Administration can effectively monitor the implementation of guidelines from time to time and apprise about the same to NMCG.

CHAPTER 3 – HIGH LEVEL MONITORING FRAMEWORK

3.1 A typical monitoring framework consists of **inputs, outputs, outcomes and impacts connected with each other through a logical causal chain**. Each of these stages ought to be measurable in defined parameters, sometimes quantitatively and often qualitatively. Converting this position paper into a policy and thereafter assessing the policy implementation would require a monitoring framework. In the following sections, a monitoring framework is laid out to provide the **milestones and/or performance indicators** of the progress of this position paper. A time schedule for the same is, however, not outlined. The work would have to be driven by the Union Govt. ministries, MoJS and MoEF&CC, preferably the former.

FROM POSITION PAPER TO POLICY

3.2 This position paper provides the **inputs** for policy formulation. The **sequential steps** by which this position paper is converted into a policy [**outcome**] are envisaged as follows :

- i. Position paper is discussed by various official stakeholders individually at State levels
 - **Output** : Revised draft of a single state-level Act which replaces earlier legislation/regulations with the objective of conserving islands in natural or [in case of occupied islands] to near natural conditions
 - **Risk** : States may have other priorities and it would be for the Central agency to overcome state inertia in a time-bound manner
- ii. MoEF&CC, MoJS and Ministry of Shipping & Transport to discuss and align or iron out grey areas and potential conflicting positions amongst their various Acts/Notifications in alignment with the pointers in this position paper
 - **Output** : MoEF&CC, MoJS and the Ministry of Shipping & Transport resolve areas of ambiguity and potential conflict among their various Acts/Notifications
 - **Risk** : Navigation routes in contentious zones need to be resolved by the 3 Ministries

iii. Central Ministries/Agencies and State representatives discuss the alignment of their revised drafts to align or iron out grey areas

- **Output** : Central and State positions come into concord
- **Risk** : The freezing of expansion of cultivation on uncultivated islands may be a sticking point from the State's perspective as they are under pressure from landless farmers and the real estate constituency.

iv. Central Ministries to enact amendments to their existing Acts/Notifications in accordance with discussions

- **Output** : Amended Central Notifications
- **Risk** : Ganga Notification can easily be amended by MoJS to reflect 'islands' explicitly

v. States to enact revised legislation/regulation in accordance with the discussions

- **Output** : Revised legislation/Regulations at the state level
- **Risk** : If legislation is required this would run the risk of rejection or watering down in Assemblies

vi. Island Policy to be notified by Central Govt as an amendment to the River Ganga (Rejuvenation, Protection and Management) Authorities Order, 2016

- **Output** : Island Policy to become binding on all stakeholders
- **Risk** : Whether district administrations will have the resources and time to deal with this additional responsibility and whether the central implementing agency [preferably NMCG] will devote resources to monitor the implementation

3.3 The **outcome** of the above exercise would be the formation and notification of a robust legal framework governing river islands in the Ganga River basin.

3.4 The **impact** of the policy, if robustly implemented, would be observed in the :

- a) Prevention of further built colonization on islands
- b) No further expansion of cultivated area on the islands

- c) Increase in wildscape, riparian grass habitats and woodlands with concomitant increase in faunal populations
- d) Regulated urban development and freeze in the development of urbanizing islands
- e) Islands in urban stretches will be developed in compliance with river-friendly formulations in the policy

FROM POLICY TO IMPLEMENTATION

3.5 Once the formal policy, i.e. the **input** at this stage, is in place its actual implementation can commence. The following outputs are expected :

- i. District administrations, Forest Departments, Tourism Departments, and Town Planning Departments are sensitized to their respective State level revised Acts/Regulations and are directed to carry out ground-level surveys annually to ensure policy recommendations are being implemented

- **Output** : Landuse control will be effected on all islands, sand mining will be restricted to sandbars, building activity will be checked, bridge connectivity to islands will be further curtailed, biodiversity inventory of islands will be carried out, cultivation expansion will be restrained, organic/permaculture agriculture will be promoted where cultivation allowed, rewilding of islands promoted where tenures lapse, eco-tourism codes dutifully enforced, jurisdictional issues resolved, policing extended to islands
- **Risk** : Often the right noises are made at the top level of the official hierarchy but additional responsibility without commensurate increment in resources leads to indifference to the new responsibility. Also, junior officials and field-level staff who have been able to exploit the grey areas and lack of monitoring may adhere to the old ways

- ii. The basin manager i.e. NMCG would direct the SMCGs to file annual district-wise reports on the implementation measures as well as the status of the islands. A remote sensing LULC [landuse/landcover] exercise carried out post-monsoon should be carried out by NMCG annually to compare changes from year to year. Ganga Mitras/District Ganga Committees may carry out field checks from time to time

- **Output** : This would ensure that islands do not change landuse, except where permitted in the urban stretch compliant with policy regulations. It would also ensure that the district administrations are faithfully implementing landuse aspect of the policy
- **Risk** : No serious risk is seen in this particular monitoring effort. Any change, if noted, would be immediately informed to the responsible agency and SMCG

iii. Resolution of navigational issues : from time to time IWAI may require changes in channels which may affect the horizontal profile of the islands. The IWAI proposals would have to be vetted by the various stakeholders [including tenure holders] to find a mutually acceptable solution

- **Output** : All agencies and affected individuals would seek mutual accommodation consistent with extant laws and island policy
- **Risk** : Where wildlife sanctuary exists or is notified in the future changes to islands may be difficult

iii. Nomenclature of Islands : By naming the islands they would become cognizable land entities in the public and administrative mind space. This exercise may be carried out and further maps of the rivers may reflect these nomenclatures

- **Output** : Islands to acquire a systematic nomenclature which is reflected on district maps and river maps
- **Risk** : No significant risk anticipated

3.6 **Outcome** : The outcome of the stated outputs should be the implementation of policy on the ground and thus maintaining the ecological and morphological integrity of the river system, landuse compatible with the river, safeguarding river islands from undesirable use, promoting riverine biodiversity, enabling eco-tourism and extension and integration of urban river fronts and city dwellers with the river in a meaningful bond.

3.7 **Impact** : A significant contribution to maintaining the river as a natural entity.



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**GNAMAMI
GANGETE**