

**UNDERSTANDING THE PROBLEM OF HYDROINCLUSION  
EMERGING FROM CHANGE IN WATER ACCESS REGIME**

**(A case study of Kharun Riverfront Development Project near Raipur City)**

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the Degree of Master of Water Policy and Governance**

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## Declaration

### Declaration

I, Abhishek Pratap Patane, hereby declare that this dissertation entitled 'Understanding the Problem of Hydroinclusion Emerging from Change in Water Access Regime: A case study of Kharun Riverfront Development Project near Raipur City' is the outcome of my own study undertaken under the guidance of Mr. Pranjal Mukund Deekshit, Assistant Professor, Centre for Water Policy, Regulation, and Governance, School of Habitat Studies, Tata Institute of Social Sciences, Mumbai. It has not previously formed the basis for the award of any degree, diploma, or certificate of this institute or of any other institute or university. I have duly acknowledged all the sources used by me in the preparation of this dissertation.



Signature of the student

Abhishek Pratap Patane

Date: 25/2/2017

## Certificate

### Certificate

This is to certify that the dissertation entitled 'Understanding the Problem of Hydroinclusion Emerging from Change in Water Access Regime: A case study of Kharun Riverfront Development Project near Raipur City' is the record of the original work done by Abhishek Pratap Patane under my guidance and supervision. The results of the research presented in this dissertation/thesis have not previously formed the basis for the award of any degree, diploma, or certificate of this institute or any other institute or university.



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*Some 75 per cent of the world's poorest people live in rural areas across the world, and for them, water access can literally mean the difference between life and death. ~ UN-FAO, 2009*

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## List of abbreviations

<b>Abbreviations</b>	<b>Full forms</b>
AOPR	Activation of Ownership of Property Rights
APP	Activation of Public Policies
ARDP	Arpa Riverfront Development Project
BATNA	Best Alternative to a Negotiated Agreement
CRQ	Central Research Question
CRC	Chhattisgarh Regional Chapter
CSO	Civil Society Organisation
CPR	Common Pool Resource
DRQ	Detailed Research Question
FIR	First Information Report
GoCG	Government of Chhattisgarh
GHC	Gujarat High Court
HC	High Court
ID	Inclusive Development
ITPI	Institute of Town Planners, India
JD	Joint Director
KRDP	Kharun Riverfront Development Project
LCL	Lavasa Corporation Limited
MCM	Million Cubic Metres
NGM	Nadi Ghati Morcha
NAPM	National Alliance of People's Movements
NCI	No Cost for the Incumbent
PPA	Proposed Project Area
PHED	Public Health and Engineering Department
PIL	Public Interest Litigation
PPP	Public Private Partnership
RDA	Rapiur Development Authority
RKKM	Rashtriya Kisan Kranti Morcha
R&R	Rehabilitation and Resettlement
RFP	Request for Proposal
RDP	Riverfront Development Project
SRDP	Sabarmati Riverfront Development Project
SADA	Special Area Development Authority
SWRUC	State Water Resources Utilisation Committee
SRQ	Sub Research Question
SC	Supreme Court
TCPD	Town and Country Planning Department

VCR	Vital Characteristic of the Resource
WAPCOS	Water and Power Consultancy Services Limited
WRD	Water Resources Department

## Abstract

The thesis seeks to understand whether the process of change in water access regime because of proposed Kharun Riverfront Development (KRDP) near Raipur city and existing related interventions conforms to hydroinclusion or not? It simultaneously tries to build on the concepts of inclusiveness and inclusive development by focusing on water access regime, thereby building a framework to understand the phenomena of hydroinclusion as well as hydroexclusion. Although there is literature on water security, specific branch of 'water access' in terms of inclusive development has not been elaborated by existing literature. Hence, by integrating these concepts it seeks to understand whether development projects on a water bodies and water resource, like KRDP in case of Kharun River and its waters, ensures inclusion of stakeholders who are at risk of marginalization and exclusion in terms of access to water. Emphasis is laid on access and use of river's water and riverine land, which are crucial key in sustaining lives and livelihoods and, important for human well being. In order to understand the process of change in water access regime it also attempts to understand the strategies of state while challenging the existing water access regime and, the role of incumbents (those constituting of current regime). What are the intentions of challenger-state and its actors? Why do they want to change the regime? Which are the proposed uses for which they want to accommodate a new access regime? These are some of the questions addressed in order to understand whether the process conforms to hydroinclusion. With the understanding of proposed change and further attempts to challenge and change the regime and, covert interests, probable implications on land and livelihoods are speculated on the basis of perceptions of people and present situation of land-use and livelihoods in the case.

## 1. Introduction

The objective of this case study research thesis is to understand whether the riverfront development project intervention on Kharun River near Raipur city changes the water access regime conforming to the concept of inclusive development and thereby hydroinclusion. Simultaneously, the thesis also tries to build a framework of hydroinclusion by inducing from the concepts of inclusiveness, inclusive development and water access regime, and validating it with primary and secondary data regarding the case. Riverfront Development Projects drastically change the land-use pattern abutting the river. A certain stretch of land along the river is transformed, thereby changing the water-use and land-use patterns along the river. Today such transformations of riverfronts are being planned in urban areas with an ostensible view of maintenance, protection and sustainable development of rivers flowing in and around urban areas, while developing the urban areas as a whole. Such projects also have a supplementary agenda of aesthetics, recreation and housing. Although this change may look like a small change, it has implications on traditional and indigenous livelihoods, which are fundamentally dependent on the river's land and water. These implications on land and livelihood may surface strongly if such a transformation is brought about in rural or per-urban areas, where people are comparatively more dependent on river than the people from typical urban centres. The riverfront development projects have recently become a trend in India which has been received by academicians with criticisms over the question of inclusive development, sustainable development and other perspectives on ecosystems.

Kharun Riverfront Development Project (KRDP) is a peculiar case unlike Sabarmati Riverfront where Kharun flows along the western and south-western fringe area of Raipur city, with a rural area of Durg district on the left bank and urban area of Raipur city on the right bank. Proposed transformation of land and access to river and its waters has been a conflictual issue in KRDP's case. With initial impression from news reports, other documents, and previous preliminary understanding, the new urban requirements seem to see the riverine land near Raipur as an aesthetic and recreational spot, along with its existing drinking water use, whereas the rural and peri-urban requirements seek to maintain the status quo by continuance of traditional uses of water and land. These contestations encouraged me to take up the case of KRDP for this thesis project. I had got a preliminary understanding of KRDP's case in May 2016, when I studied the

conflict over KRDP, while interning with the Forum for Policy Dialogue on Water Conflicts in India. From the preliminary understanding and impressions it was known that the people in proposed project area are strongly dependent on Kharun River's water near Raipur.

Change in the land-use pattern for KRDP is bound to have implications on access to Kharun's water and thus on their lives and Kharun based livelihoods. With an intention to build upon my previous knowledge, I decided to further take up the KRDP case for this thesis project. I believe that water resource and access to it is the crux of contestations over riverfront development projects (RDP). While aesthetic and recreational use of river's water is appropriated in RDPs, the importance of water as a subject in planning fades off or remains in the periphery of urban-land centric development plan. The status of livelihoods dependent on those riverine lands, and the river itself, is determined by the access to water, if water is available. In Kharun's case livelihoods are majorly revolving around agriculture and fishery, which are river dependent. Access to water is a crucial determinant of people's wellbeing there. So, water access for different uses, is the core focus of this thesis, as it is the base for land-use, livelihoods, etc., which are means of human wellbeing. It leads us to the question whether such a project conforms to inclusive development? On the basis of current water access regime, the thesis seeks to understand the probable implications of KRDP on water access regime, land and livelihoods, which are dependent on Kharun's water. It attempts to speculatively analyse probable transformations in the current water access regime, and whose access will be entertained or furthered at whose costs in the tradeoffs? Who will be included in KRDP and who will be excluded from the present water access regime? Whose river dependent land-use and livelihoods will be affected for whose privileges?

So, the broader concern, which the thesis emphasises, is whether the KRDP conforms to inclusive development in terms of water access. I concisely call it hydroinclusion, as I simultaneously and gradually attempt to build the argument for it through KRDP's case, with a case study approach and qualitative research methods. KRDP's probable implications on water access regime are seen from the broader lens of inclusive development with an exclusive focus on water access, riverine land and livelihoods. The thesis further attempts to simultaneously build and gradually induce a framework of hydroinclusion from the existing literature of inclusive development relating to natural resources. Another important aspect while building this

approach to water access and inclusive development is the politics and power play of key stakeholders involved to seek their interests. The interests of different stakeholders in such a project plays vital role in influencing the water access regime and its dynamics. These dynamics in turn again feeds back in the decision making by determining whose water access will be entertained and whose water access will be changed. It will also be interesting to know how the state's policy, and dynamics of interests of stakeholders, may bring about the probable implications on water access regime.

### 1.1 Understanding waterfront development as a concept and a phenomena

Waterfront development projects in present times are largely urban phenomena. Such projects necessarily do not connote an urban activity, and may also be carried out in rural areas. But the need for such projects is largely emerging from urbanisation. Urban waterfront means the water's edge in cities and towns of all sizes, where the water body may be a river, lake, ocean, bay, creek or canal (Satu and Sairinen 2005). Conceptually, urban waterfront development or redevelopment is described as the process which embodies the historic alteration of land and water uses along the water edges of thousands of cities, large and small, throughout the world (Satu and Sairinen 2005, 121). It is also called as waterfront regeneration interchangeably. Satu and Sairinen describe waterfront regeneration as an introduction to broader idea of environmental sustainability, which also constitutes of the social dimensions, in present times.

Technological changes post World War II leading to abandonment and deterioration of thousands of acres of industrial land across waterfronts, historic preservation movement, heightened environmental awareness and water cleanup, consistent pressure to redevelop central city areas, public (state, federal and municipal) urban renewal and related assistance are some of the factors attributed to waterfront redevelopment trend in Europe (Satu and Sairinen 2005). There is a difference between the waterfront development as a conceptual process and waterfront development as an activity, project or phenomenon. Waterfront development as a conceptual process can be understood as a process which involves historic alterations, if we go by Satu and Sairinen's definition. However, a waterfront development activity or a project can be described as a time-bound action plan to alter the land and water uses along the water edges on the basis of envisioned goals. So, we can call that activity or project a phenomenon, but not a concept. Similarly, riverfront development can be seen as a concept and a phenomenon / activity as well.

The terms like urban waterfront regeneration, urban renewal and urban revitalisation are used interchangeably in European and American contexts. In Indian context, reports and literature have used the term waterfront or riverfront development. The terms ‘waterfront development’ or ‘riverfront development’ is loosely used considering its derivation from the European context at face value. It denotes more of an activity or a set of activities, adopted from European context, rather than a gradually developed concept, considering India’s contextual peculiarities. It can be called development, instead of re-development or regeneration, by the virtue of it being the planned intervention activity on the natural form of a water body, in some cases. In India we can roughly divide waterfront development projects spatially into urban, peri-urban and rural by looking at these phenomena. For example, a project like Sabarmati Riverfront Development, would fall in the traditional category of urban waterfront (riverfront) development project, whereas a project like Lavasa waterfront city, would fall in rural category and KRDP would fall in peri-urban category. However, all the three categories in Indian context have an urban orientation, in the sense that the goals of such waterfront development activities if to encourage urban models of cities or waterfront agglomerations.

Each of these spatial features would have different sets of problems. Although the riverfront policies in different cases of India claim or mention the words, like sustainable development, inclusive development, and so, there is literature which raise apprehensions over such claims and policies as a whole. However, it should also be understood that the trend of such projects is new in India as compared to European context. The construct of ‘riverfront development’ concept in context of India would gradually take place as time passes. Since 1970s a number of waterfronts have undergone changes from being a ‘green belt’ to commercial residential and recreational areas, and new laws and tools have been developed in order to regulate what can be built near water (Satu and Sairinen 2005).<sup>1</sup> The usage of term green belt is also seen in the master plans of Indian state and district level authority. Master plans are vision documents, which gives a direction for development plans.

In case of KRDP, the prospective project area is shown as a green belt by Durg district’s master plan. Although the master plan has not been completed yet, the tentative master plan maps of

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<sup>1</sup> A green belt is a policy and land use designation used in land use planning to retain areas of largely undeveloped, wild, or agricultural land surrounding or neighbouring urban areas. The term is generally used in European context.

Durg district circulated amongst the Gram Panchayat shows the prospective project area for KRDP as a green belt. Retention of land abutting Kharun River is contradictory to KRDP. Hence, in KRDP's case formation of Special Area Development Authority was planned. Such an authority is formed under section 64 (1) of Chhattisgarh Country and Town Planning Act, 1973, which is meant to undertake 'development activities' around such areas. So, there are escape routes to regulations which aim at retaining certain sensitive areas near urban city centres.

## 1.2 Evolution of waterfronts

The policy term used in governance for structural changes in urban land use and waterfronts have been known under different labels, namely, reconstruction in 1950s, revitalisation in 1960s, renewal in 1970s, redevelopment in 1980s and regeneration in 1990s (Roberts 2000). The evolution from the first to the fifth period ranges from physically oriented section-wise renewal schemes, to a more comprehensive form of integrated policy and practice. These periods have had implications on urban waterfront policies as well. So, the different terms for urban waterfront or riverfront regeneration are derived from the typical urban regeneration terms along with the periods of evolution. It is obvious because water bodies in and around urban areas have usually been a part of overall urban policy and planning, and are not seen separately as natural bodies many a times in the pursuit of urban development processes.

Stage	Symbol		Period	Characteristics
	○ city	● port		
(I) Primitive cityport			Ancient–medieval to 19th century	Close spatial and functional association between city and port
(II) Expanding cityport			19th–early 20th century	Rapid commercial and industrial growth forces port to develop beyond city confines, with linear quays and break–bulk industries
(III) Modern industrial cityport			mid-20th century	Industrial growth (especially oil refining) and introduction of containers and ro-ro facilities require separation and increased space
(IV) Retreat from the waterfront			1960–1980s	Changes in maritime technology induce growth of separate maritime industrial development areas
(V) Redevelopment of the waterfront			1970–1990s	Large-scale modern port consumes large areas of land- and water-space; urban renewal of original core

Figure 1: Hoyle's model of evolution of port-city to waterfront redevelopment (Kostopoulou 2013) (Butuner 2006)

Another famous waterfront evolution is the historical model of port-city development by Hoyle gives a changing picture of evolution of port-city and waterfront relation with regards to its

spatial use (See figure 1). In one of the case studies on waterfront in Makassar city of Indonesia, the authors have focussed on tracking the evolution, wherein they have put forth a case specific evolution of this city's waterfront in five different phases.

<i>Phase</i>	<i>Century/ Years</i>	<i>Function</i>
I.	Ages 13 - 16	River as transport.
II.	Ages 17 - 19	Switch the colonial waterfront.
III.	1950 - 2000	Into a public space beach.
IV.	2002 - 2013	Being a waterfront
V.	2014	Waterfront City Integrated Tanjung Bunga

**Table 1: Evolution of Makassar city's waterfront to a waterfront city on Tanjung Bunga (Erham and Hamzah 2014)**

A review of academic and policy work by European scholars suggests that current form of urban waterfront development (including riverfront development) has evolved through different phases in different times or eras in Europe, along with changes in uses of water (Satu and Sairinen 2005). However, in Indian context, riverfronts did not undergo phases like those in Europe, but here the trend seems to adopt riverfront model directly from the latest phase without giving natural space for its evolution in Indian context. Some have put forth four phases of riverfront evolution whereas some have put forth five (Erham and Hamzah 2014).

### 1.3 Riverfront development: Urban phenomena in India?

The trend of riverfront development projects in India, which began in post 2010s, are said to be inspired from European riverfront development examples (SANDRP 2014). An article by SANDRP (South Asia Network on Dams, Rivers and People) states that, riverfront development phenomena are largely associated with recreational and commercial activities (SANDRP 2014). In India, these projects are shrouded with incompatibilities and conflicts. The trend of riverfront development in India can be considered as a paradigm shift, because under the present government at centre, such projects are gaining momentum all over India. The present paradigm, in which one of the pioneers is said to be the Sabarmati Riverfront Development Project (SRDP), is spreading throughout many regions in India (Mathur 2012). But, SRDP is engulfed with problems of displacement, Rehabilitation and Resettlement (R&R) policy, Municipal politics, Riverfront PILs, Ahemadabad Municipal Corporation's fragmented resettlement policy (Desai

2014). Such projects are being implemented or envisioned in or around city centres in India. On the basis of European context, a new paradigm of riverfront development is evident in the state policies toward river basins in India at a larger gamut.

Apart from the renowned Sabarmati Riverfront Development Project (SRDP), many other riverfront projects are underway, or are being planned in / around various city centres in India on respective rivers, namely, Yamuna riverfront project, Delhi; Godapark, Nashik; Ganga riverfront development project, Bhagalpur; Gomati riverfront project, Lucknow; Mula riverfront development, Pune; Arpa riverfront, Bilaspur; Bindal riverfront development projects, Dehradun, and so on. Most of these projects are being planned or undertaken lately. Some of these projects are planned to be facilitated under the present government's Atal Mission for Rejuvenation and Urban Transformation (AMRUT), through private participation (Anparthi 2016). So, largely the trend has a background of urban setting. It can be seen as a trend induced by urban expansion and its implications on water bodies and surrounding land. The President Emeritus of 'The Institute of Town Planners, India' (ITPI), Dr. D.S Meshram, while delivering his speech on the inaugural address on foundation of ITPI's Chhattisgarh's Regional Chapter (CRC) as well as 'workshop on water front development in Chhattisgarh', had said –

*“From immemorial times, water bodies have the sacred place in our culture as can be seen that ghats at rivers, kunds in temples and towns are not just sources of water but are also community spaces... Therefore, it is needless to say that there is a need to maintain and develop these lakes, back waters, and river fronts for active use for the city and save these spaces from hazardous urban development including encroachments. (ITPI-Newsletter 2015)”*

Kharun riverfront development project (KRDP) is one of such projects being planned near Raipur city, which is the capital of Chhattisgarh state. The first phase of this project was proposed to be developed on around 20 km of stretch and 300 metres on either side of the river with an estimated cost of around Rs. 2000 crores, until the protests against it slowed down KRDP (GoCG 2015, 2). Streamlining of river's course and reclamation of land; promotion of recreational amenities to encourage tourism; housing and commercial complexes; risk reduction of erosion and flooding and making river pollution free by preventing direct flow of sewage, were the larger aims and objectives of the initially proposed project (RDA 2015).

#### 1.4 Politics of inclusion in India's waterfront projects: A snapshot of two cases

The apprehensions which are raised by academia and Civil Society Organisations (CSOs), over exemplarity of Ahmedabad city's urban governance, vis-à-vis experiences of urban poor due to major urban renewal project of SRDP in Ahmedabad, are crucial in context of politics of inclusion. The question of inclusion of urban poor in renowned "good governance" practice in Ahmedabad city, in the light of this project needs a closer scrutiny, because it is being replicated around India (Mathur 2012). KRDP is also being planned on the lines of SRDP. Mathur also tries to explore what connects professional urban planning to the politics of governing urban populations and spaces characterized by poverty. However, KRDP forms a unique case where the proposed area is not in the heartland of Raipur, so the problems of exclusion are of different nature, and not fully related to the question of inclusion of only urban poor. In such cases the victims of exclusion are also rural people, where the projects are planned on the urban periphery or rural areas. So, it is a mix of rural and urban or rurban. While describing the background of Ahmedabad city, Mathur initially gives a snapshot of the city's working poor population, where 75-80% people work on the streets and open spaces after closure of cotton textile mills. He also highlights spatial differences between the rich and poor within the city, in the backdrop of social segregation and past ethnic violence. He further describes the SRDP as urban landscaping project aimed at transforming both the sides of riverbank into leisure space, provide flood management solutions, protect river from sewer pollution and create value for land that is wasted.

Even the 600 years old Gujarati Bazaar was not spared amidst development alternative for the bazaar at the same place were proposed by institutes like IIM Ahmedabad. Moreover, the local authorities disregard to the directions of Gujarat High Court over PIL filed by vendors' association there, has had critical implication of livelihoods of hundreds and thousands dependent on this market. Further, emphasizing again on the rehabilitation of families under various housing projects, author draws attention to the sorry state of spatial differences and spatial dimensions in terms of access to utilities and socio-economic needs. He has further criticized the notion of riverfront as public space which is in reality shrouded with class differences and skewed with preferences for commercial projects. Mathur has criticized this manifested claim of totalitarian planning public value (Mathur 2012).

The consulting company involved in SRDP ensured that the relocation of people would not happen at distant place, thus negating the negative impact of gentrification by planning relocation at a distance of around 2 km (Desai 2012). Desai argues that under the false carrot of inclusion, the affected people were co-opted to push the project. The consulting company in one of its project related document conceded -

*“...relocation of low-income communities at distant locations, by disrupting the close relationship between the place of work and residence, has a very negative impact on their economic and social well being.”* (Desai 2012).

But, in reality around 19,000 families from the riverfront, were resettled in the 13 new housing estates built under the BSUP scheme of the JNNURM in 2011-12 (Mathur 2012, 71). On an average the distance of relocation is about nine km, and the furthest relocation is about 16 km, which has had serious implications of the factors like education, health, livelihoods, etc. (Mathur 2012). The devastating effects of far site relocation are well established through empirical evidence based on the studies carried out by Cernea and McDowell (2000) for over 30 years (Mathur 2012).

A working paper published by CEPT University’s Centre for Urban Equity, adds on with a comprehensive narration of SRDP with a core focus on displacement and Rehabilitation and Resettlement (R&R) policy in SRDP. It gives a detailed understanding of myriad issues ranging from Municipal politics to resettlement policies. It also emphasizes on Riverfront PILs, R & R policy, Ahemadabad Municipal Corporation’s fragmented resettlement policy and its implications in the context of KRDP (Desai 2014). These phenomena can be compared while speculating possible scenarios and institutions involved in riverfront development project in India, which can be extrapolated to Kharun’s case in terms of politics of exclusion.

In case of Lavasa city as an example of waterfront development in India, according to activists of the National Alliance of People’s Movements (NAPM), 372 hectares for Lavasa Corporation Limited (LCL) was acquired by the state under Maharashtra Agriculture Land (Ceiling and Holding) Act of 1961 (Datta and Shrivastava 2011). Under the Act, land in excess of the ceiling limit is acquired from landowners and distributed to the landless. If activists are to be believed the government transferred this land to Lavasa and not to the poor. “This land was identified in

1973, but was never acquired by the government till LCL set up this project,” conceded an NAPM activist (Datta and Shrivastava 2011). The reason for the land transfer is evident in a letter sent by the collector of Pune to the revenue department. The letter dated January 9, 2005, mentions that the government would earn only Rs 1,02,736 if the land was given to the poor, instead of Rs 1.65 crore if the it is given to LCL (Datta and Shrivastava 2011). This can be seen as a deliberate exclusion from the lens of gentrification. On contrary, the value of water generated through such a project is important. Today Lavasa is a well known tourist place. One can see that the villages and hamlets through which one needs to travel by road, has generated income opportunities for the people of villages near roads leading to Lavasa. One can see many people selling local fruits and berries on the road side near villages.

Lavasa is a replication of Italian port city Portofino. And Lavasa is built on backwater of Varasgaon dam, upstream of Pune city. In this case the questions over inclusion of project affected people can be raised in the context of dependency over water. The original waterfront of Portofino would have had lesser problems because the dependency on sea water is limited as compared to backwaters of a dam or a river. The assessment of degree of water dependency is very crucial in such cases, but the task seems tough as delineating the degrees cannot be hard and fast. Dependency has a larger social dimension. Hence, the degrees of dependency on water tend to have many grey areas in between. The degrees of “water dependency” are significant analysing the social dimensions of waterfront regeneration (Wrenn 1983). These are also important in determining the magnitude of problems that would emanate from interventions on waterfront, and the problem of social exclusion. Satu and Sairinen have proposed three such degrees, Water-dependent uses (waterfront location is indispensable), Water-related uses (maximizing the advantages of waterfront location), Water-independent uses (neither dependent nor related to waterfront) (Satu and Sairinen 2005). In case of riverfront development the water dependent uses are more, as against waterfront development near sea-ports or port-cities.

Ipsita Chaterjee explains the concepts of estrangement and placelessness in the process of development where land is acquired, which are exclusionary. Many riverfront development projects call for displacement due to land acquisition, which also has implications on livelihood. A Marxist critique of neo-liberalism and its urban policies can be used in viewing the phenomena of riverfront development. On Sabarmati Riverfront Development Project (SRDP),

Chhatterjee is of the view that displacement of lives and livelihoods of poor inhabiting the banks of Sabarmati River is crucial cornerstone in completion of SRDP (Chhatterjee 2014). According to her, displacement of poor is the foundational basis for neoliberal process of capital accumulation.

Further she also explains the phenomenon of placelessness because of displacement. She describes its phenomenology as, "...the loss of authentic, sense of loss of identity, and a loss of the local." Another concept which Chhatterjee has put forth in opposition of riverfront development is "estranged space". Chhatterjee (2014) sees the Marxian concept of estranged labour in the backdrop of production of space and the case of SRDP. Like Marxian term "estranged labour" she uses the term "estranged space" in the view of Marxian contention, which posits human displacement from land are 'forced' to sell their labour, and this alienation of labour from their own labour is called as "estrangement of labour" by Marx (Chhatterjee 2014). Similarly, Chhatterjee concedes, "Alienation of humans from their right to produce their own space and hence their own existence and history is what I refer to as estranged space" (Chhatterjee 2014, 142). According to her, space is crucial for humans' existence, and it is being detached from humans to further capitalist accumulation. She posits this in the view of SRDP. Since riverine space is the crucial key to access River's water and its other resources, estrangement can also be seen from a view of change in the water access regime. With probable displacement, the estranged space also has implications of the change in water access and uses. Similarly, she explains the concept of gentrification; the process which brings the higher class or the gentry at the city centres or the core areas of infrastructural investments, or the main areas. It can also be seen as probable capitalisation and gentrification on basis of waters of Kharun by estrangement of water access, which leads to loss of land based and non-land based livelihoods (e.g.: fishing). However, creation of newer opportunities due to project cannot be denied.

## 2. Methodology

### 2.1 Philosophical worldview

The philosophical worldview that I held while doing research on this case was **social constructivism**. Subscribing to elaboration on theory of constructivism by Fosnot, Steffe and Gale (Fosnot, 1996; Steffe & Gale, 1995), that learners actively construct their own knowledge

and meaning from their experiences is the essential core of constructivism (Doolittle and Camp 1999). Its epistemological inquiry emphasises on concepts of relativism and subjectivism, which are of the view that although reality exists separately from experience, experience is the only way through which reality can be known (Doolittle and Camp 1999). And hence reality is always relational and subjective, which is perceived, understood and known uniquely by every individual. I subscribed to this worldview because my research was based on the primary data consisting on subjective answers to my questions, given by different respondents. So the construction of meanings and interpretations will be based on these social perceptions held by the respondents uniquely. Open-ended questions in the method of data collection, allowed me to retrieve these contextually constructed subjective meanings of the problem that I have intended to emphasize and grasp its phenomena in case of KRDP. So, I focus on understanding the complexities of different views, by considering the contextual setting of respondents. This helps me in inductively building the phenomena of change in water access regime and whether it is inclusive or exclusive, thereby building the argument of hydroinclusion.

While building the framework of hydroinclusion I draw from the existing concepts of water access regime and inclusive development, which are constructed in form of theories and relevant to this research problem. Since this worldview says that determination of representations of the world (knowledge, concepts, etc.) is an outcome of interactions with others, it is very much relevant to the research problem I have undertaken for my study of the very construct of whether the approach of state's policies, probable changes in water access regime and expressions of conflict over riverfront development project, conform to inclusive development. It will be stepping stone to understand the perceptions and construct a pattern around the existing riverfront development trend through this case.

## 2.2 Research strategy

I plan to adopt case study research strategy, wherein, largely my case is bounded spatially to KRDP's proposed project area and lands and livelihoods dependent on the proposed KRDP land and the river-stretch. However in order to understand the interests of key actors, the vision of KRDP and other process of the riverfront project's intervention, my respondents and spatial boundaries are not necessarily rigid, so as to reach out the grey areas. It involves in-depth study of KRDP's plan and vision; roles and interests of institutions and key stakeholders; probable

changes in water access regime and the question of hydroinclusion and probable implications on land, lives and livelihoods because of the regime change, which has been the cause of conflictual expressions over KRDP. Here the case is KRDP, which is an event, a policy and a project intervention as a part of riverfront development activity.

So, KRDP in itself is my unit of analysis. The feature that makes this case distinctive from other riverfront development cases in India is that, it is a case located on the fringes of city centre, which forms a mix of rural and urban lifestyle and characteristics. This unique spatial nature of the case and its location makes it a case with unique set of complexities, which majorly can be seen as inter-sectoral rivalry over river's access and use, as well as a conflict between rural and urban uses of riverine resources, especially water and land. It also has a peculiar character of water access regime, which will be discussed in the chapters ahead. Secondly, it has been enveloped with manifestations of conflict already in its initial phases of planning. Although there is a spatial angle to the conflict and its manifestations, those are only considered in the villages near Raipur city along Kharun's opposite bank of Raipur. Thirdly, it remains a less known case in India, unlike the famous cases in the big cities.

So, a single case study approach with a holistic case study design was adopted as the research strategy with qualitative methods, considering the problems and questions that are needed to be understood and addressed. By holistic it means, the unit of analysis is the whole single case, and there are two sub-cases as smaller units of analysis within the holistic case on the basis of spatial division. One is the proposed project area upstream of Bhothali village only along Raipur city, and the other is the proposed project area downstream of Bhothali village only along Raipur city. These two sub-cases are two different stories or narratives within the case of KRDP, because they are characterised by different responses to KRDP and have distinctive land-use pattern in the riverfront area, which is crucial in determining access to the river and its water. So, the probable implications of interventions in the existing access regime and manifestations of conflict and its reasons, over KRDP may also be different in both the scenarios. However, these boundaries are not hard and fast, because the project has been spatially defined with a proposed area, but the key actors are also from the Raipur city. Also certain changes in the water access regime have already been affected due to increasing urbanisation and some riverfront works by

Water Resources Department, foreseeing KRDP, but not as a part of KRDP. Moreover, the project is envisioned to be extended further in a staged manner.

## 2.4 Research methods, field site and sampling

### 2.4.1 Methods for research and data collection

I have used qualitative research methods during my case study on KRDP. Since the nature of the problem demands an enquiry, which would be based on social constructs and perceptions about conflict and related problems over KRDP, I have used qualitative methods. These are essentially non-numeric methods like semi-structured interviews, observation, and focused group discussions, which largely included open-ended questions and probe points for gathering primary data. During the course of my visit I also played the role of participant observer. While waiting before appointed, or as a part of interaction with the respondents in villages during movement's mobilisation drive, I was involved in their activities as an active participant. It honed my data collection style by giving me an opportunity to put myself into the respondents' shoes, and gave me some primary data which I can present maintaining the confidentiality as and when required. This information provided me with the data related to the aforementioned problems based on how respondents construct the social reality. It will help me in understanding the problems, which otherwise numerical data cannot capture fully.

### 2.4.2 Field site and sampling

My field sites were basically the villages in proposed project area of initial KRDP plan, and offices of government authorities, civil society organisations, media houses, etc in Raipur city. So my field sites included areas from both Durg and Raipur districts, as the river forms a natural boundary between these districts. For the same I used purposive sampling technique so as to gather data for predetermined questions which are specific to certain respondents in certain areas within the case. On the basis of purposive sampling technique, I focused on habitations and people from proposed riverfront development zone of 9 villages, out of the 15 proposed villages, namely Amleshwar, Khudmuda, Bhothali, Bhatagaon, Sarona, Chandanidih, Atari, Kumhari and Magarghata. Certain portion of land of each of the 15 villages falls under the proposed project area as per the initial KRDP plan, according to 300 m either sides and 20 Km stretch proposal. I had planned the data collection in three phases in upstream and downstream locations, where upstream is the upstream of Kharun from Bhothali village.

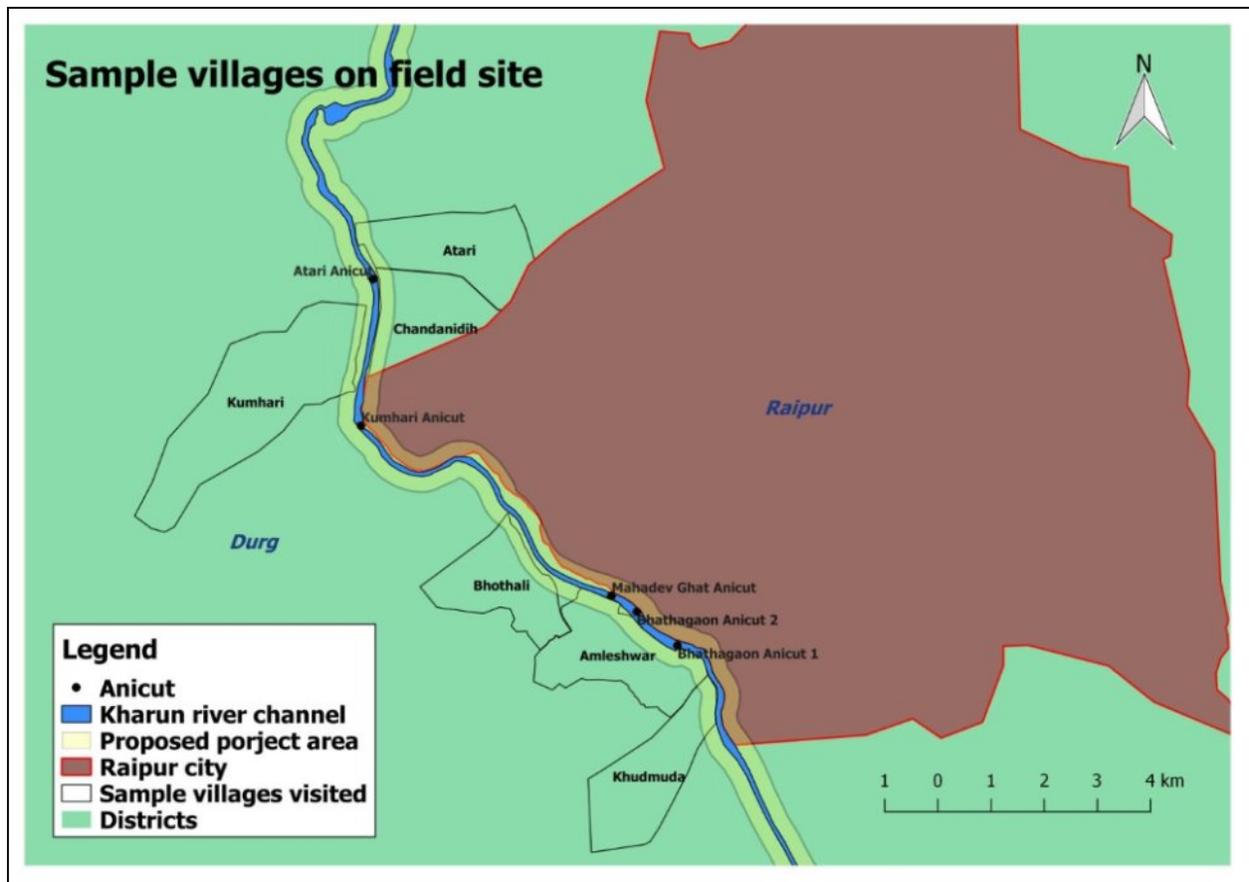


Figure 2: Sample villages on field site with some anicuts near Raipur

I purposefully chose 4 villages in upstream (Amleshwar, Bhothali, Khudmuda and Bhathagaon) and 5 villages in downstream (Sarana, Chandanidih, Kumhari, Atari and Magarghata). The rationale behind choosing these villages was, firstly, they were located in the proposed project zone. Secondly, the upstream villages of Bhothali, Khudmuda and Amleshwar were the hotbeds and initiators of protests against KRDP. Thirdly, Bhathagaon from upstream, and Chandanidih, Atari and Sarana from downstream were selected because these are the villages / areas which fall under jurisdiction of Raipur Municipal Corporation and Raipur district. However, they have rural characteristics, like agriculture is the prominent livelihood. Unlike Bhathagaon, which is in upstream of Bhothali, the other selected villages from Raipur have typical rural characteristics as they are located comparatively away from the city centre than Bhathagaon, and hence they have less influence of urbanisation. Kumhari and Magarghata were selected to enrich the data with downstream rural situation and perceptions about the problems. I had planned to interview 5 respondents from the village, with a purposive intention of interviewing 5 different people with

different livelihoods occupations. This was planned with a major focus on farmers, fisherpersons and landless labourers, so as to make sure that different social compositions and livelihood dependencies should be represented, which will reflect on the perceptions about probable changes in the water access regime.

### 2.4.3 Data collection

On account of time and fund constraints, I could collect data only from 6 villages in the proposed project area, namely, Amleshwar, Bhothali and Khudmuda in the upstream and Atari, Kumhari and Chandanidih in the downstream. Apart from the primary data from the ground zero I have also collected primary data from Raipur city through semi-structured interviews (SIs), Telephonic interviews (TIs), Focussed Group Discussions (FGDs), observations and participant observations, involving responses from Ministers, bureaucrats, convenors and members of CSOs, etc. Apart from that, I also collected secondary data from the field in form of Preliminary Feasibility Assessment survey reports for KRDP's Master Plan by WAPCOS; data on land parcels falling in proposed project area; document on information regarding anicuts on Kharun River along Raipur district from the Mahanadi Project of WRD; document on riverfront development activity plan by WRD, Raipur Development Authority and GoCG's letters, proformas and communications regarding KRDP.

I collected data in three different phases, wherein the first phase of my data collection was a part of my internship work with the Forum for Policy Dialogue on Water Conflicts in India, which was also on KRDP. It encouraged me to take up this case for dissertation. The questions then designed were primarily focussed on the problem of conflicts and interests, and were very similar to the questions that I have posed in this thesis. As the phase one involved comprehensive sets of questions which also covered the primary data required for the problems and questions raised in this thesis, to a great extent. Second phase involved filling of gaps in first phase and third phase was telephonic interview without a field visit in person.

Out of the total interviews conducted, a total of 18 SIs and 16 TIs were conducted in the upstream and downstream villages, respectively; 8 in Khudmuda, 6 in Amleshwar and 4 in Bhothali.

Phase no.	Field sites	Respondents	Number of SIs and FGDs		Time period
			SIs	FGDs	
1	Amleshwar, Khudmuda, Bhothali, RDA HQ, Environment Minister's house, Naidunia and Patrika News office, and CSOs' office	<ul style="list-style-type: none"> <li>• Environment and Housing Minister of state (SI),</li> <li>• Chief Engineer RDA (SI),</li> <li>• Convenors of RKKM (SI and FGD) and NGM (SI),</li> <li>• Journalists (SI) and</li> <li>• People from villages (FGD and SIs)</li> </ul>	26	2	9/5/2016 to 17/5/2016 (9 days)
2	Atari, Kumhari, Chandanidih, Minister's house, WRD-Sihawa bhavan and Mahanadi proj. Office and CSOs' office	<ul style="list-style-type: none"> <li>• PHED Minister (SI),</li> <li>• Chief Engineer and subordinate engineers of WRD (FGD),</li> <li>• People from villages (SIs and FGDs)</li> </ul>	21	2	5/11/2016 to 10/11/2016 (6 days)
3	---	<ul style="list-style-type: none"> <li>• Head planner of TCPO for Metropolitan cities, Ministry of Urban Development of India, Delhi;</li> <li>• President of Institute of Town Planner's India, Delhi;</li> <li>• Joint Director of Town and Country Planning Department of Chhattisgarh</li> <li>• Affiliates of real estate sector</li> <li>• CSO convenor</li> </ul>	10	-	1/12/2016 to 6/1/2017
Total			57	4	15 days on field

**Table 2: Data collection details of three phases**

One FGD was also conducted in Bhothali with participation of Bhothali's villagers and Sarpanch, Gangaprasad Nishad. FGD was conducted because Bhothali is one among three village hamlets which totally falls under the PPA for delineation of SADA. In downstream 5 SIs, 5 SIs and 6 SIs were conducted in Atari, Chandanidih and Kumhari respectively, with 1 FGD in Chandinidih basti. So the final coverage of planned data collection on field was different and shortened due to temporal and financial constraints. Ethical concerns like maintaining anonymity of respondents on request and on sensitive issues has been ensured. Time and funds constraints along with sensitive environment due to conflict were some of the challenges. Another limitation

was interviewing women, as it is a norm that women in the villages do not talk to a male from other parts, especially a person like me coming from metropolitan city.

## 2.5 Research questions

CRQ	SRQ	DRQ / Probe points
Whether the state's policy of Kharun Riverfront Development near Raipur, conforms to hydroinclusion?	A. What are the riverfront development policy's implications on land and livelihoods near Kharun River?	<ul style="list-style-type: none"> <li>• Current land-use pattern and ownership</li> <li>• Livelihood dependency on land in PPA</li> <li>• Idea of riverfront development and plans to change land-use in PPA</li> <li>• Status of land market and its linkage with the decision making</li> <li>• Probable transformations in land and river dependent livelihoods</li> </ul>
	B. What can be the probable implications on the water access regime due to riverfront development policy?	<ul style="list-style-type: none"> <li>• Current formal and current informal water access regime</li> <li>• Intended interventions on river and its waters</li> <li>• Perceptions about changes in the regime in PPA</li> <li>• Perceptions about change in river dependent livelihoods</li> </ul>
	C. What are the competing conflictual interests?	<ul style="list-style-type: none"> <li>• Interests in decision making</li> <li>• Interests in land and livelihoods</li> </ul>

**Table 3: Research questions**

The table 3 shows the central research question (CRQ), sub-research questions (SRQs) and detailed research questions (DRQs) / probe points.

## 3. Inclusion in changing water access regime: Towards an analytical framework of hydroinclusion

### 3.1 Understanding the concept of inclusive development

There is no consensus on the definition or understanding of the concept of inclusive development (ID). Different schools of thought subscribe to different perspectives of ID according to their

schools. Much of the elaboration and emphasis by the existing literature is on inclusive growth, whereas, there are not many authors who have explained the nuances and complexities of the concept of inclusive development. Lately, Gupta et al, have put forth an elaborated theoretical understanding of ID and its distinctiveness from inclusive growth, wealth and economics. ID emphasises social and environmental aspects of sustainable development, whereas, inclusive growth refers to creating jobs for the poor to increase their incomes, assets and other social goods, and stimulating competition and aggregate growth in the economy, which emphasises individual wealth accumulation over collective well-being, and short-term gains over long-term sustainability, with a focus on welfare approach, (Gupta, Pouw and Ros-Tonen 2015).

Accepting the definition of inclusiveness put forth by Narayan et al. that, inclusion addresses the structural inequalities faced by women, the disabled, indigenous peoples and the rural poor, Gupta et al. reject the narrative of inclusive growth because of its narrow and exclusive focus on economic performance indicators. ID's first appearance is said to have occurred in the literature of the Asian Development Bank (ADB, 2007) as a strategy towards equity and empowerment (Gupta, Pouw and Ros-Tonen 2015). ID from the perspective of Gupta et al., it is defined as development that includes marginalized people, sectors and countries in social, political and economic processes for increased human well-being, social and environmental sustainability, and empowerment (Gupta, Pouw and Ros-Tonen 2015, 546). They call it an adaptive learning process, which responds to change and new risks of exclusion and marginalization (Gupta, Pouw and Ros-Tonen 2015, 546).

### 3.2 Inclusion and water access regime-change

From here on, I would like to focus on the proposition of response to 'change' and 'new risks' in the light of political process of inclusion and water access regime, while proceeding towards a framework for hydroinclusion in case of KRDP. Here the responses from which the adaptive learning is expected to happen, largely happens from the state machinery, which includes the development projects by government departments, missions, and other authorities. With the adaptive learning from experiences of past development projects, the state machinery is expected to respond to the change and new risks, which their development plans and projects bring along with it, as a trustee of common resources. In doing so it the state is expected to respond to ensure inclusion of marginalised people, sectors and environmental sustainability, especially in Indian

context where the constitution provides for social, economic and political justice to all its citizens.

In contemporary discourse, the draft national water framework bill 2016, sees water in the inclusive way –

*“Water is the common heritage of the people of India, held in public trust, for the use of all, subject to reasonable restrictions, to protect all water and associated ecosystems. In its natural state, such as river, stream, spring, natural surface water body, aquifer and wetland, water is a common pool resource, not amenable to ownership by the state, communities or persons (Chapter 3, Section 4(1) (MoWR 2016).”*

It also sees rivers as a common pool –

*“River basins or sub-basins shall be managed in a way that ensures scientific planning of land and water resources, taking basin/sub-basin as unit...based on the recognition that water is a common pool resource held by the state in public trust (Chapter 4, section 12 (7) (MoWR 2016).*

Although rivers and water bodies are seen as common pool resource (CPR) and state as a trustee of it, the fact remains that the access to water is determined by the dynamics of change in water access regime in eminent domain. Even if the constitutional provisions seek to see water as a CPR, water is perceived as a ‘state subject’ where most of the powers over water as a subject are in the hands of state and not centre.<sup>2</sup> The state governments have a *defacto* power to influence the water access regime. While influencing the regime it is important to speculate, which new risks and changes a riverfront development project-intervention brings about in case of KRDP and how the state government responds to it on the basis of their current vision and perceptions of stakeholders. At a state level the policies and rules regarding development interventions on water bodies, especially, rivers, are not defined clearly. This grey area leaves the space for planners and implementers of states’ policies to discern and plan according to their interests or rationale. In such a scenario the regimes of water access and allocation, both formal and informal, becomes an important area of argument. The access to water resources in such a case is determined by a mix of formal and informal water access regimes.

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<sup>2</sup> Here state means state government, and not state as an entity.

The oxford dictionary defines regime as the system or ordered way of doing things. Regime is often termed in the context of the way of governance. Access is defined as means to reach a certain thing. Access describes the degree to which a household can obtain water, whereas, control describes how well a household can move water from a source to the location at which the water is applied (FAO 2008). So, water access regime is defined as the system or ordered way of accessing water. Now this system can be formal as well as informal. In case of water policy and governance parlance, the delineating line between what is formal water access regime and what is informal access regime is faint. However, in our case formal water access regime is defined as the water access practices which complies with state's water access rules and regulations defined in Acts, policies, rules, government resolutions, etc. On the other hand, informal water access regime can be defined as the water access practices which follow a set of norms other than state's policies, Acts, rules, etc. However, some practices may fall under the category of grey water access regime, meaning they emerge from formal regime, but do not have detailed rules to make those practices operational. And hence are subject to people's own discretion, which may gradually become an informal norm to access water.

### 3.3 Strategies of changing water access regime

Now let us go back to the previous concept of inclusiveness / inclusion in development with regards to response to 'change' and 'new risks' of exclusion and marginalisation, in the light of political process of changes in water access regime. The state plays a major role in influencing the regime-change with different strategies through legislation and policy making. Thus, state's intervention strategies of development can be inclusive or exclusive / marginalising while responding to 'new risks' or 'changes' in a development policy, like a riverfront development policy. These changes are driving by the decision making institutions, who at times leaves out certain sections of the society while pursuing the development interests of certain other section, knowingly or unknowingly. Inclusive development, in terms of contestations over natural resources, is also strongly found in the narrative of political ecology school. According to Paulson et al. (2003), political ecology is about struggles over resource access and control (Cole 2012).

The problem of inclusion vis-a-vis probable changes in water access regime, and how changes and new risks of marginalisation come into play in riverfront development policy can be further

looked through the lens of David Aubin's and Frederic Varone's analytical framework on the political strategies of getting access to the water resource. While theorising the strategies to get a successful access to water resource, Aubin and Varone have put forth the rivalrous relation between a 'challenger' and 'incumbent', which may lead to conflict (Aubin and Varone 2013). According to their frame a challenger(s) or a newcomer(s) is the new claimant over access to water for a new set of use in the existing water access regime, whereas the incumbent are the existing users of water in the existing water access regime (Aubin and Varone 2013). While defining incumbent(s) Aubin and Varone necessarily consider those who have a right in accordance of rules and regulations, but they have not considered the grey areas of policies which we mentioned earlier, and which also accommodate certain informal access regime practices. So, for our understanding, I include the informal water access regime as a part of incumbency as compliance over such grey matters are neither expected nor rejected. In case of river, we can also talk about access to river and not just water, as river dependent livelihoods are also dependent on riverine land, along with its waters.

Aubin and Varone define success as a situation where the challenger has gained the rights to use the water resource, which can take various legal forms (Aubin and Varone 2013). For a challenger to be successful in changing the water access regime with its new use and access, the behaviour of the incumbent must change by altering existing use and access, and making space for the new entrant-use and access of the challenger (Aubin and Varone 2013, 155). In successful water access there is resolution of rivalry, which can be described as incompatibilities over use of water between two or more users for their respective uses. Nevertheless, these strategies do not necessarily mean that they can only be adopted to further the interests of marginalised sections and people /citizens at large. These strategies can also be used by state institutions to further the interests of a section to secure water access over a river's water for a certain use, which Aubin and Varone have not specified in their framework. In our case of KRDP, these strategies and challenger-incumbent dynamics can be used, where state government institutions can be seen as challenger with a new intervention of KRDP, which comes with a new claim for water access and use.

Aubin and Varone have put forth three broad, but empirically tested conditions of gaining success in water access in different case studies, which are, approval of rules that value the new

use of challenger; vitality or essentialness of nature of the resource for challenger and strategies like persuasion, accommodation and threat that the challenger uses (Aubin and Varone 2013). These three fold broad categories are explained in form of five conditions, namely, activation of property rights, activation of public policy, vital character of resource, no cost to incumbent and best alternative to negotiated agreement (Aubin and Varone 2013). In first one which ownership of property rights, say land, gives access to water, but changing ownership incurs huge costs. When ownership costs heavily then public policy path can be used. A public policy is defined as a series of decisions or activities taken or carried out by different public actors whose aim is to resolve a public problem, which target the owners and non-owners to achieve well being of final beneficiaries (Aubin and Varone 2013). However, final beneficiaries may be determined according to the interests of the implementers and policy makers. Resource of vital character may activate the above two conditions in Indian context, where it implicitly falls under fundamental right and government will be responsible for activation of first and second strategy. The fourth one is a win-win situation, which rarely happens, where incumbent faces no losses in form of external costs. And the fifth one is a kind of informal resort. For the case of KRDP first three strategies and process of water access regime change are important.

### 3.4 Defining hydroinclusion and its application

Drawing from the discussion until now, inclusive development from the lens of political processes of water-access strategies, leads us to the frame of hydroinclusion. Hydroinclusion is defined as inclusion of marginalised people and sectors in the process of changing water access regime and use, during the process of development intervention on a water body. Building on Gupta et al. description of ID as an adaptive learning process, which responds to change and new risks of exclusion and marginalization, hydroinclusion can also be seen on similar lines, as a process which responds to change and new risks of exclusion and marginalisation emerging from a change in water access regime during a development intervention, and thus livelihoods dependent on it, which are a means of peoples' well being (Gupta, Pouw and Ros-Tonen 2015). Why only focus on water access regime and water dependent livelihoods to determine hydroinclusion? According to FAO's rural water and livelihood index, some 75 per cent of the world's poorest people live in rural areas across the world, and for them, water access can literally mean the difference between life and death (Sullivan, et al. 2009). And most of the marginal and poor communities are dependent on water resources found in commons, like rivers

and riverine areas. The change in water access regime can be understood from Aubin and Varone's conditions where a challenger seeks to bring about a change in the access regime. Although hydroinclusion may sound similar to the concept of water security, it is different with regards to water access that it talks of people's capacities to safeguard access, whereas hydroinclusion is more focussed on the process and negotiation of obtaining access and, whether it is inclusive in terms of development interventions over water bodies.

While bringing the changes in water access regime in case of KRDP, the first three conditions are applicable. From the three, the first two conditions, namely achieving access through activation of property rights and policy activation are the strategies being used by state government presently. However, the riverfront development project is still largely in its planning phase, and only a minuscule portion of implementation work has begun. Such projects are slow interventions or schemes, which may take anywhere between 10 and 30 years, or more, for completion, depending upon the process of regime change and response of people to the strategies government adopts. From the three conditions, government's plan and vision and people's perception, it can be speculated whether the project will conform to the broader goal of inclusive development in terms of water access regime, and thus hydroinclusion.

A successful water access to government as a challenger for its new river water use in KRDP's case can be attributed to the strategy of property right activation and policy activation. However, the third strategy is not applicable for the state, but for the people in the proposed project area (PPA) who find access to Kharun River as essential or vital to their lives. So, the probable changes in existing water access regime, both formal and informal, can be speculated on the basis of proposed plan, vision and perceptions vis-a-vis conditions for regime change. Under the three conditions the primary data can be cross checked to see whether the incumbent in form of current users are willing to accept the proposition of the new challenger-state, or not. Once that is speculated, it can be then further speculated whether the current plan for such a change in the access regime would respond to new risks of hydro inclusion, on the basis of perceptions of people in the PPA, who are primary stakeholders, regarding probable changes in water access, and its implications on land and livelihoods.<sup>3</sup> If the vision of the plan seeks a regime strategy which is not willingly recognised, and may have serious negative implications on land, lives and

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<sup>3</sup> Primary stakeholders are those stakeholders who are directly affected from an intervention or an activity.

livelihoods, then hydroexclusion can be speculated. The perceptions of changes in water access regime should be seen in the light of interests of different stakeholders to substantiate the argument of hydroexclusion, because the interests of stakeholders known through rigorous collection of primary data and cross verification will make a strong speculative argument of hydroinclusion in KRDP's case.

#### 4. The story of Kharun Riverfront Development Project

4.1 River Kharun near Raipur: A background River Kharun originates near Petechuwa village in Balod district of Chhattisgarh state. It flows from south towards north, through Balod, Dhamtari, Raipur, Durg and Bemetara districts for a stretch of about 129 km. Its average width is of 100 metres (WAPCOS 2015, 4). It forms a natural boundary between Durg and Dhamtari district; Durg and Raipur district and Raipur and Bemetara district as it flows towards north to meet Seonath River (a major tributary of Mahanadi River) near Sahgaon village in Bemetara district. Being a seasonal river with an average annual yield of 1802 million cubic metres (MCM), it mainly carries discharge during monsoon (WAPCOS 2015, 4). The river's catchment area is of 4112 km<sup>2</sup> with an average annual rainfall of about 1022 mm in the basin (WAPCOS 2015, 4). The river floods for two to three days during monsoon as conceded by villagers in FGD and interviews. According to hydrology report of WAPCOS the flood peak discharges with return periods of 25 years, 50 years and 100 years are 1281 m<sup>3</sup>/sec, 1328 m<sup>3</sup>/sec and 1368 m<sup>3</sup>/sec, respectively. Kharun is the main source of drinking water for Raipur city. Two anicuts, namely, Bathagaon 1 and 2 near Ghugwa village around Raipur, reserve water diverted from Ravishankar Sagar reservoir (Gangrel dam) through Mahanadi branch canal, which is then conveyed to Raipur city for drinking purpose. Towards downstream there are few other anicuts built for industrial, irrigation and drinking water purposes.

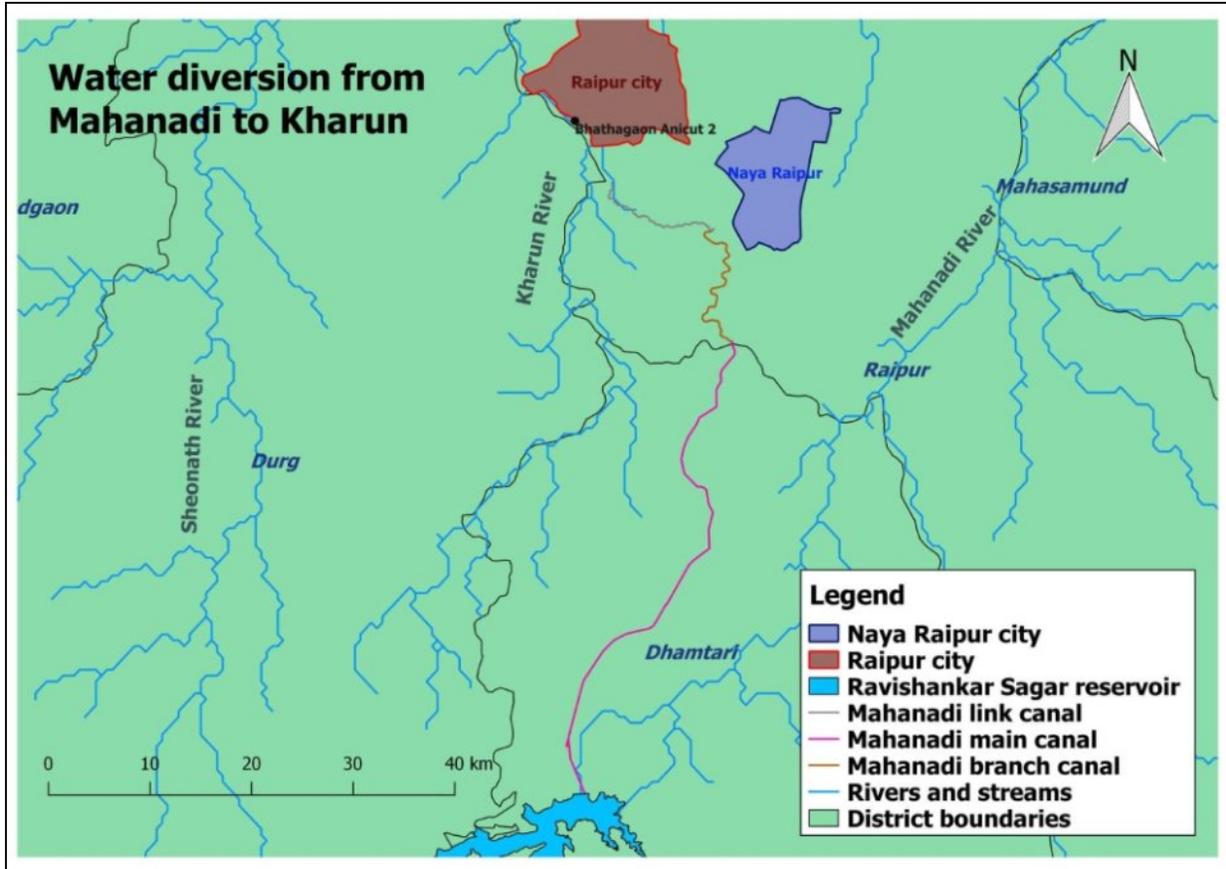


Figure 3: Diversion of water from Gangrel on Mahanadi to Kharun near Raipur



Figure 4: Contamination and hyacinth cover in Kharun, downstream of Mahadev Ghat, near Bhothali in the month of May, 2016

Kharun is heavily contaminated due to release of industrial effluents and domestic sewage, largely from Raipur city and surrounding areas, especially in the downstream of Mahadev Ghat. There are eight main sewerage outlets, which discharge sewage directly into Kharun, of which some coming from Raipur are located near Bhathagaon anicut, Mahadev Ghat, Kathadih, Raipura and Sarona (Patrika 2016). The river is covered thickly with water hyacinth downstream of Mahadev Ghat, which indicates high level of eutrophication, thus having a negative impact on the fluvial environment (see figure 4). One of the core arguments by proponents of KRDP is reduction of river water contamination. This argument is used predominantly by proponents in order to push the project forward.

Looking at Kharun with a spatial angle in terms of land-use and livelihoods near Kharun, from the map (see figure 5), it can be seen that the western riverfront falls in the Durg district which is a rural area, whereas the eastern riverfront on the bank is on Raipur's periphery. The river channel in the upstream of Mahadev Ghat, which is located just north of Mahadev Ghat sewage outlet near Raipur city, is full of water. The satellite imagery is of April 2016, which is a lean season. Still the upstream areas near the riverfront have green patches of farmland due to better access and availability of water, which is diverted from Gangrel dam.

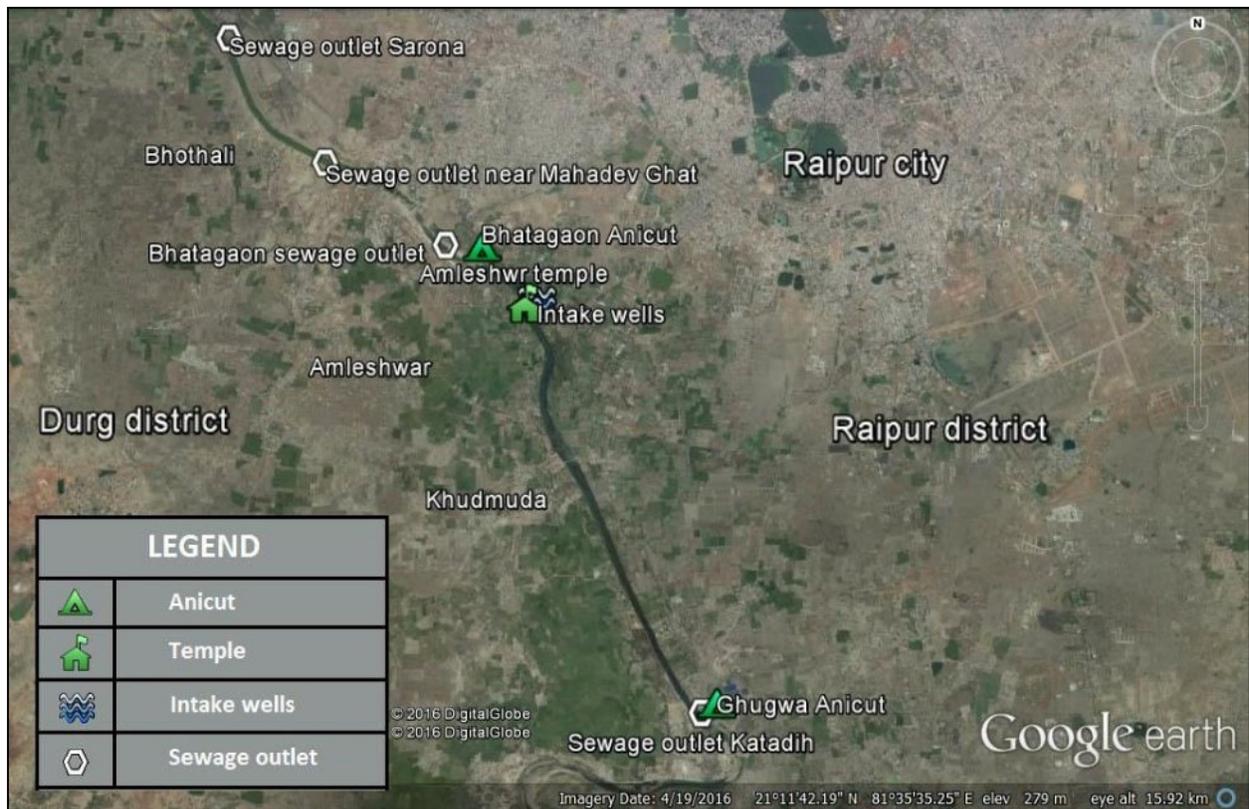


Figure 5: Sewage outlets on Kharun near Raipur (Map source: Google earth)

But in the downstream area, if we look at the river channel closely, it is green in colour; covered with water hyacinth. Also the farm lands do not look as green as the upstream, indicating comparatively lesser access to water from river. Kharun has few important sites which are of cultural importance. Of those, Amleshwar Mahakal temple, Hatkeshwar Mahadev temple and Mahadev Ghat are cultural and religious sites on Kharun near Raipur. In 2013 a major archaeological finding of 2000 years old ‘Kharun valley civilisation’ near Tarighat added to the historical importance of the river (T. Pioneer 2016)

## 4.2 The vision of KRDP

### 4.2.1 The ITPI's vision

The Institute of Town Planner's, India (ITPI) is one of the powerful institutions and networks when it comes to influencing the land-use planning. It is a strong network of Town Planners, especially the government officials and bureaucrats across the expanse of Town Planning Department's hierarchy. It is a network of Town Planners from almost all the states and union

territories of India, which conducts several series of conferences, workshops, training courses, deliberations, etc. It is a known fact, that land is the most valuable resource, and hence projects involving land-use change are highly influenced by the town planning department. Similarly, KRDP also involves the land-use change of the riverfront / riverbed, which falls under the category of green belt, and is an environmentally sensitive zone.

During telephonic interview, the President Emeritus of ITPI, Dr. D. S Meshram explained how he and ITPI views waterfront and riverfront development projects. He was of the view, that riverfront development project is about protecting and maintaining the riverfront. He further said, that the development of waterfront or riverfront is a process where land-use changes are made / have to be made to ensure such facilities which will increase the active use of the water body / river. According to him, these days the water bodies are lacking water in them, or are heavily polluted, thereby reducing the water use and dependency. Such bodies, especially near urban areas are vulnerable to urban hazards, like encroachment. So, zero run off principle is crucial in improving the water availability, and subsequently the other riverfront development activities to facilitate more active use of water body will fall in line. However, the question prevails, that who will be the users and beneficiaries of so called revived or changed dependency on urban water bodies? The president's similar views are also recorded in the ITPI's quarterly newsletter, wherein one of the newsletters of 2015 was partially dedicated to the Chhattisgarh Regional Chapter (CRC) of ITPI, as it reported the inaugural ceremony of CRC and workshops to boost riverfront development projects in Chhattisgarh, with a focus of presentations and sessions on KRDP and Arpa Riverfront Development Project (ARDP). Both the events were scheduled during the same time in the presence of ITPI's president and the Additional Chief Secretary of Chhattisgarh State.

It was actually the inauguration of CRC as an ITPI's regional chapter was not constituted in Chhattisgarh since its formation. Mr. Zahid Ali, the Joint Director of Chhattisgarh's Town and Country Planning Department, was appointed as the Chairman of CRC. Mr. Meshram in his inaugural speech talked about riverfront development and the need for it, which he also conceded during the telephonic interview. He believes in the 'zero run off' principle. According to his view, if we stop water by adopting zero run off policy, the water level will increase in the water body, which will be helpful in reviving the water bodies near cities. Once water bodies start

reviving with improved water availability due to stoppage, water dependency will increase (ITPI 2015). Further he says in order to ensure that water dependency increases, it is important to encourage people to use that water, then only they will realize its importance. They will keep the water body clean when they are close to it, and it will inculcate the sense of responsibility. It is interdependent process of reviving the water body through a sustainable way. For indigenous communities also the availability of water through ground will improve as zero run off principle will increase the water table, he believes. However, streams and rivers are lines of discharge point and not recharge points, if one sees this argument from hydro-geological point of view. His argument of zero runoff along the streams and rivers is thus negated. Speaking about housing and recreation he says, that housing and recreation is a small component to bring in viability in terms of finance. He also said that to ensure regulation over water body and its sustenance, against problems of encroachment and pollution, we need to make the project viable. So, keeping in mind the surrounding situation of water body the plan must be made, as per the President's view. The state has already adopted anicut policy to impound waters which matches with Meshram's views, although largely for irrigation. But near Raipur the purpose of stop dams and anicuts is drinking water supply. A new use in form of recreational and aesthetic use will lead to contestations over the waters of Kharun. It will be discussed further.

He says in CRC he appealed to the state government to allot land for development of both urban and rural areas in a sustainable way. He conceded that land near water bodies are community spaces with multiple uses. Such lands near urban areas are vulnerable to the hazards which the process of urbanization brings in, like encroachment. So, he believes that it is important to make active use of these spaces to save them from such urban hazards by maintaining and developing them.

#### 4.2.2 The state government's vision

After understanding the trickle down of plan from ITPI to state level, state vision is crucial because it is the designer and implementing institute of KRDP. The Environment and Housing Minister of Chhattisgarh, Mr. Rajesh Munat, conceded his vision in a semi-structured interview for this case study. According to Mr. Munat, who also holds the portfolio of Town and Country Planning Department (TCPD), the aim of KRDP's plan is to keep the river alive, to improvise zonal plans, planning of ghats, public utilities and recreational facilities. He denies the

accusations of ‘some’ people, indicatively the protesting groups, that he wants to do business out of Kharun River, but he said in fact are making workable zonal plans for development of different zones. He envisions it as a plan for next 25 years.

In his view, the project is important for security of riverfront and conservation of the river as a whole. As there has been a problem of encroachment and harm to riverfront and rivers environment due to various human interventions, like discharge of sewage, illegal mining, encroachment, etc. He perceives that the river’s environment has been threatened and hence zonal plan is the solution. The river is lifeline of Raipur and now he wants to make it ‘the face of Raipur’. Hence, he and his government are determined to save the river by securing its riverfront, tree plantation, tourism development, etc. When he was interviewed, he said that they were planning to do a DPR study for land use pattern in that area, even though the project was suspended and it was reported in the news that formation of a special authority for an integrated development of KRDP was scrapped after protests (छत्तीसगढ़ 2016). Further he admitted that the state will come soon out with a plan which will also include riverfront gardens, wedding hall, farmhouses, etc., with or without Special Area Development Authority and an integrated KRDP plan.

Regarding land-use change and acquisition he rejects the possibility of land acquisition, and projects his care for farmers and landed people. However, he accepted that acquisition would happen at very small extent, only if ardently required. If ever acquisition happens, he assured of highly prioritizing rehabilitation over other things. Thus survey was being conducted through WAPCOS, he said, so as to try to avert private land acquisition as much as possible. He further mentioned that whatever land will be under the project area it will not be given to private builders and real estate companies for development, where in fact the proposal and ARDP are planned on PPP basis. But he also did not fail to say, that if farmers’ change their land use from agriculture to non-agricultural, and build hotels and housing projects, we have no problem with it. It is a hint for strong inclination to proceed with KRDP by showcasing the possibility of consent from farmers.

### 4.2.3 The vision of state's bureaucrats

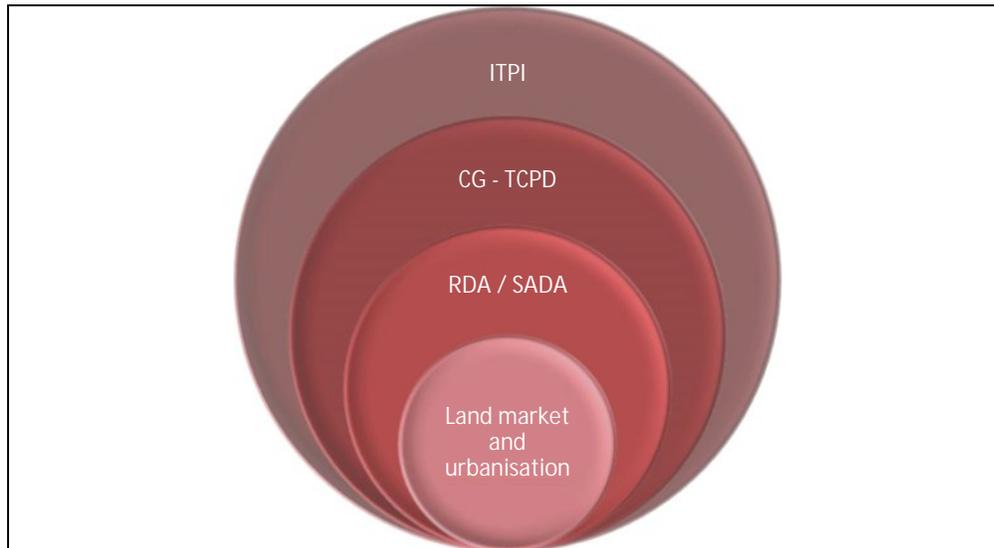
According to the Chief Engineer of Raipur Development Authority (RDA), which is appointed as the nodal implementing agency of KRDP, it is a crucial project, from environmental and recreational point of view, with gardens and environmental conservation measures. Pollution control, infrastructure development, conservation of environment and river, parks and entertainments, etc., are some of the key goals along with goals STPs and sewage treatment, which is important for a city like Raipur where sewage is being released in Kharun without treatment. Another thing he said was about arresting river water by building stop dams, especially in the downstream area of Kharun near Bhilai-road area; building gardens, parks, stop dams etc. He says that barrage / anicut is a necessity for such place (project). He points out SRDP where there are check-dams, since KRDP is based on Sabarmati plan. He feels that there is no point in talking about KRDP as it is not feasible and viable. Major challenge is to change the land use pattern, which is not financially viable. Villagers won't give up their lands, he said. Responding on the technical aspects, he said that the edges of a river keep on changing its course according to river's nature, so in such projects they widen the river channel. There is also an issue of encroachment in such areas, which has stopped after widening and fencing intervention. All in all for him it is a good spot for development near Raipur, as contamination control, gardens, botanical gardens, etc are important for Raipur city. Talking about housing, he said that housing will be very less. Land-use has to be changed for the same and it drastically changes in such a project. It is a difficult task to do it as there is a lot of agricultural land and farmers will not give them up as it is a source of their livelihood which is prosperous. But he did not fail to mention that if they (government and TCPD) decides and plans then housing will be there. They (govt. / TCP) will decide where the residential plots will be located.

Another important, rather most important, actor representing bureaucratic vision, is the Joint Director of Chhattisgarh's TCPD and Chairman of ITPI's CRC, Mr. Zahid Ali views KRDP. When interviewed over phone, he began by proudly saying that KRDP was TCPD's initiative where he played an important role in bringing up that idea. In his view, in Kharun's riverfront side, which is an area of 100m on either side, they are planning to make parks on that area. He asks, what harm will it cause to the river? If they build parks, then on the same area adjacent to park they will also do commercial development. He further explains, if they transform 90% of that area into park, then they shall do commercial development on 10% of that area. They will

build infrastructure for people like sitting area, eateries, etc. Apart from that they will also focus on other infrastructures to keep the river clean. But, he firmly says, in order to make it viable and hence sustainable, commercial development is required. His idea is more relevant to the concept of inclusive growth, and not development. And it is crucial as he is the one who will plan and sanction the new and changed land-use for KRDP. He further explained the plan and said, they will plan some of riverfront's area for residential development on the similar lines of development of riverfront residential colonies on Arpa River in Bilaspur under Arpa riverfront development. For the same they have already established Arpa Authority in Bilaspur. He then explained how they did a rigorous in depth study by NEERI, and its planning includes all these things which he told before. In ARDP they have separately carved out some recreational area, residential area and some commercial area, he said. While doing that they did not cause any adverse effect on the river's natural course according to his statement.

Speaking about anicut building, he said they are not doing or building anything new on the river. They will not be constructing new anicut. As far as Kharun River is concerned, there are already so many anicuts, so they are planning to do is develop both the sides through 'Laxman's bridge', by bridging Raipur's and Durg's edges on Kharun River. Commuting will increase after bridging. Both the urban areas will be well connected after that. In this way people will enjoy that area as picnic spot. This interview was taken in December 2016. By then the focus of policy makers and planners had shifted towards downstream of Bhothali village after protests, and subsequent suspension of initial plan. Mr. Zahid also said that they do not intend to stop water by building anicuts, whatever anicuts have been constructed are already there. There won't be new anicut construction in this project. They will use the existing anicuts for the project as far as new one is not required, but they may make changes in the existing ones. However, considering Mr. Zahid's infamous recent past where he was convicted in land grab scam in a well known housing project called 'Kamal Vihar' and his infamous connections with the land market affiliates, his connection with the land market cannot be denied. During his interview also he accepted that sustainability can only be brought through financial viability and commercial development. Apart from that accusations and confessions by certain anonymous respondents and some heads of CSO also triangulate his strong connections with the land market.

We can see the whole institutional vision and its influence in a trickle town shades in figure 6, where the aspirations, interests, ideas and visions differ at each level as it comes down to the implementing agencies. These linkages will be further discussed in proceeding chapter(s).



**Figure 6: Vision of KRDP at different level and its connections**

### 4.3 KRDP initially proposed plan

Kharun Riverfront Development Project (KRDP) is being planned on lines of Sabarmati Riverfront Project in different phases. The initiative for KRDP's plan has been taken by Housing and Environment, and Town and Country Planning Departments of Government of Chhattisgarh (GoCG) (CEO 2015). The first phase of this project was proposed to be developed on around 20 km of stretch and 300 metres on either side of the river, with an estimated cost of around Rs. 2000 crores. Raipur Development Authority (RDA) was vested with the role of implementing agency, until the formation of Special Area Development Authority (SADA) (GoCG 2015, 2). Streamlining of river course and reclamation of land; promotion of recreational amenities to encourage tourism; housing and commercial complexes; risk reduction of erosion and flooding and making river pollution free by preventing direct flow of sewage, are the larger aims and objectives of this project according to 'Request for Proposal' (RFP) document for KRDP. (RDA 2015).

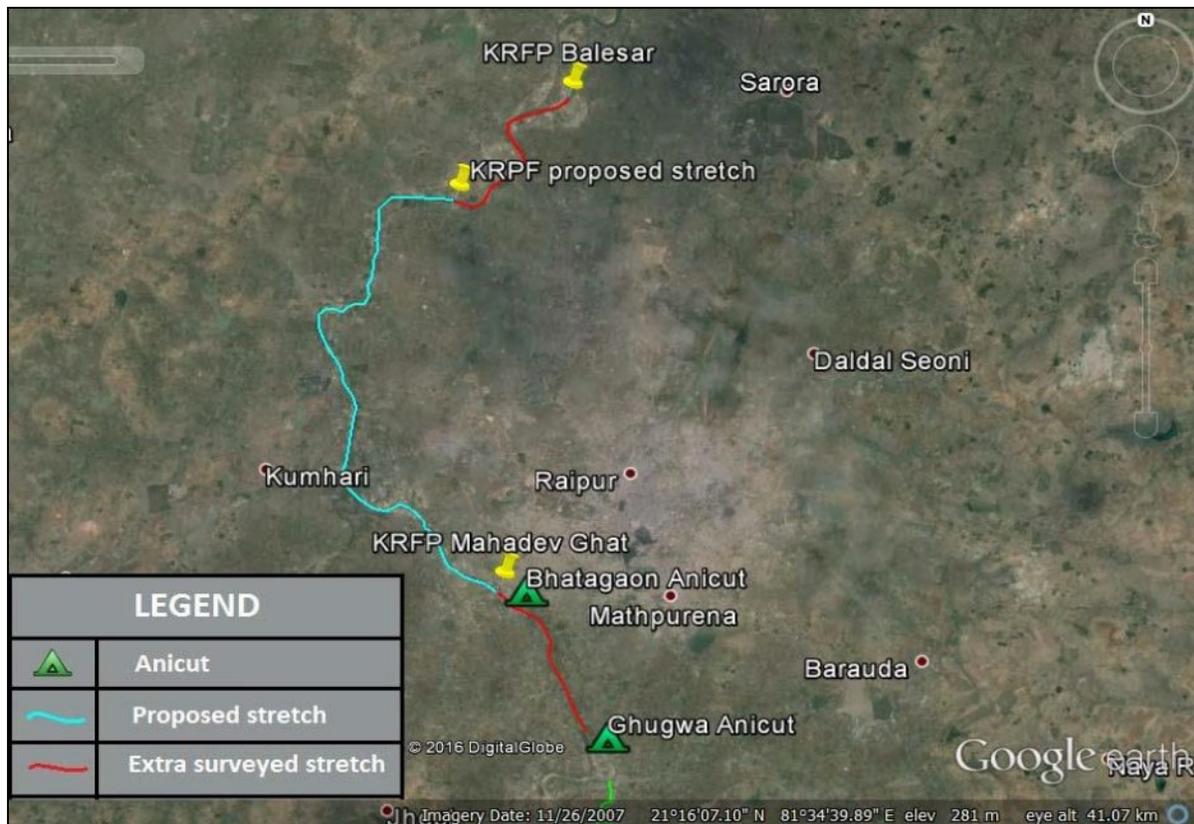
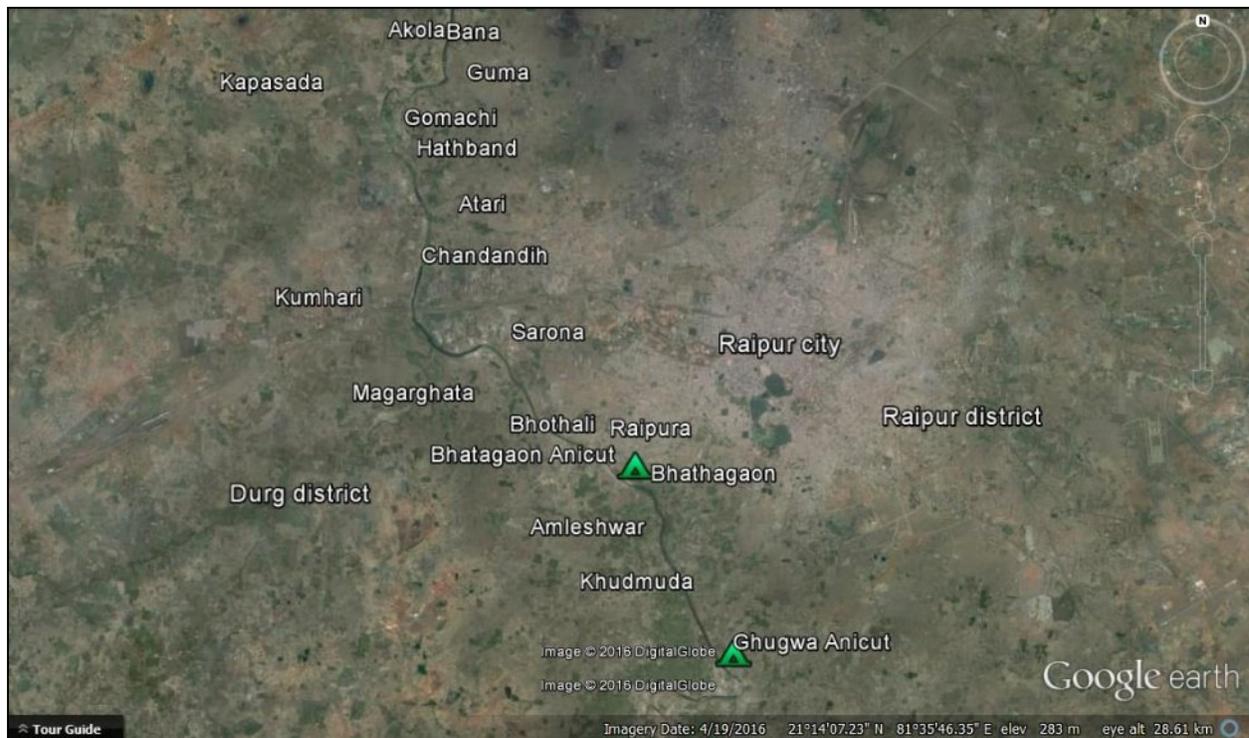


Figure 7: KRDP's proposed area along with extended area surveyed by WAPCOS (Map source: Google earth) KRDP's proposed area along with extended area surveyed by WAPCOS (Map source: Google earth)

**\*KRFP is Kharun Riverfront Project, which is same as KRDP**

The prospective project area is mentioned as the 'special area' according to RDA's RFP. This delineated area was proposed to be administered by Special Area Development Authority (SADA), which is supposed to execute implementation plan of this project. Section 69 of the Chhattisgarh Town and Country Planning Act, 1973, confers SADA with the powers for the purpose of municipal administration and taxation. In the project's preliminary feasibility assessment reports made by WAPCOS, it is mentioned that SADA's authority will prevail from Kharun's origin till its confluence point with Seonath River (GoCG 2015, 2). This is indicative of intention to gradually extend this urban river front agglomeration throughout the river's stretch of 129 km. Total delineated area for this project is 1192.97 hectares, of which only 288.34 hectares is government owned land and 904.36 hectares is privately owned land. WAPCOS was awarded a consultancy contract of Rs. 3 crore and 50 lakh for these feasibility surveys.



**Figure 8: Villages whose riparian lands fall in the proposed special area (Map source: Google earth)**

Riverine land of villages, namely, Bhathagaon, Raipura, Sarona, Chandandih, Atari, Hathbandh, Gomchi, Guma and Bana from Raipur district, and Khudmuda, Amleshwar, Bhothali, Magarghata, Kumhari, Kapasda and Akola from Raipur and Durg districts are delineated for proposed SADA (GoCG 2015, 3). KRDP was proposed to be a Public Private Partnership (PPP) project, which was supposed to be taken forward as a PPP only after assessment of its feasibility. The decision to avail loan was to be taken only if funds aren't granted by the GoCG, and option for foreign financial assistance has been knocked out (RDA 2015). In alternative option assessment it was recommended,

*“The River Front can be developed for Public and Recreation Facilities only. However, we believe, it would not be financially viable (RDA 2015).”*

Although, both the ITPI's president and Joint Director of states Town planning Department hold the view that Recreation and Housing will be a small component of the project, the above quote from proforma for expenditure document, and Environment Minister's confession says otherwise. As against the former persons' views, the latter ones say that KRDP is only meant for recreational and housing purpose. According to David Harvey et al., entrepreneurial urban

governance, which is reflected in today's regeneration phase, involves public-private partnerships, flagship project, aggressive marketing and consumption oriented projects with a view to pursue investments, considering inter-urban competition (Satu and Sairinen 2005). Similar phenomena of inter-urban competition could be found in KRDP's case where the proposed project is planned on the basis of public-private partnership (PPP) (RDA 2015). Also the idea of KRDP, which emanated from ITPI's vision in CRC inaugural session, was delivered in the backdrop of sustainable smart cities. Under the name of sustainable cities the competition among Indian cities seems more of a consumptive and market oriented competition, rather than one with sustainable approach. Promotion of recreational amenities to encourage tourism, housing and commercial complexes are some of the broader objectives of KRDP as mentioned in the project's proposal.

One of the proposed plans includes building of a new anicut 10 km downstream of Mahadev Ghat so as to maintain sufficient water level for recreational purposes (RDA 2015, 52). Since this project is being planned on lines of Sabarmati riverfront where water from Sardar Sarovar dam is diverted to maintain sufficient water levels, it can be plausibly speculated that more water will be diverted from Gangrel dam so as to maintain sufficient water levels in Kharun (Mathur, On the Sabarmati Riverfront: Urban planning as Totalitarian Governance in Ahmedabad 2012, 66). The Joint Director of Chhattisgarh's Town and Country Planning Department, Mr. Zahid Ali, who is said to be the brainchild of this plan, said that there is no other alternative, but to divert extra water from Gangrel in order to maintain sufficient levels in KRDP. The project has been currently halted, and an integrated plan of KRDP has been suspended for the time being, after expressions of conflict in form of protests in upstream. Although it remains suspended, the project will proceed in other ways, if not through formation of SADA in an integrated way, which will be discussed ahead.

## 4.4 Current water access regime

### 4.4.1 Current formal regime

#### **i. Chhattisgarh Regulation of Waters Act, 1949**

The Chhattisgarh Regulation of Waters Act, 1949, provides for regulation of appropriation of water by industrial concern of local authority, for industrial or urban purposes. It gives all rights

in the water of any natural source of supply to the state government, except appropriation of rights before the date of notification and those mentioned in Indian Easements Act, 1882 and Indian Limitation Act, 1908. Moreover, Entry 17, List 2 of the Indian constitution vests the state governments with power to legislate over the subjects related to water – “Water, that is to say, water supplies, irrigation and canals, drainage and embankments, water storage and water power subject to the provisions...” Section 5(1) of the Chhattisgarh Regulation of Waters Act, 1949, vests exclusive powers to make rules for regulation of quantity, manner of supply and use of water from any natural source of supply for industrial and urban purposes (IELRC 2014).

It also provides for various prescriptions and directives related to state’s power to regulate the same, along with provisions related to compensation in case of water-works intervention by local authority or industrial concern affects any person. Section 7(1) of the act states -

*“Any person who, in consequence of the appropriation of water by an industrial concern or a local authority under the provisions of this Act, or any rules made there under is adversely affected, may apply for compensation in such form, as may be prescribed, to the Collector of the district in which the damage in consequence of such appropriation occurs (IELRC 2014, 3).”*

However, any such compensation has to be claimed within one year, which is not plausible considering the anicut policy’s slow and gradual implications which over time have become serious, and did not show its negative implications on discharges and fish stocks in Kharun near Raipur.

So, the major powers to influence formal water access regime lies in the hands of state government, which are effectuated in form of rules, notifications and policies. However, there is no institute for regulation of use of water resources in the state, which is the reason for ad hoc decision making practices by the Water Resources Department (WRD) of the state. This grey area has also encouraged informal practices, which forms a major part of the informal water access regime.

## **ii. Chhattisgarh state water policy**

The Chhattisgarh State’s Water Resources Development Policy, 2012, is similar to its previous water policy of 2001, but the latest one is more comprehensive. It envisions environmentally

sustainable development of water resource of the state. It also lays emphasis on protection of river banks and riverine land from encroachment, and relocation of those entities, which have already encroached on such areas. The Water Resources Department (WRD) has already begun that work in the downstream of Mahadev Ghat, wherein recently in late 2016 they began the fencing work on Kharun River's bank to protect it from encroachment, in the downstream. By 2040 the proposed allotment of water for different purposes are, 20% for domestic purpose (Drinking water, *Nistar*, filling of water tanks, etc); 50% for irrigation and 5% for industrial use, of the total water resources available (GoCG 2012, 6)<sup>4</sup>. In case of Gangrel dam on Mahanadi, which diverts water to Kharun via Rudri Barrage for drinking water purpose of Raipur, the annual drinking water allocation of the reservoir is 61 Million Cubic Metres (MCM) (WRIS 2012). However, the Chief Engineer of WRD and other subordinate engineers conceded in the focused group discussion, that these policy prescriptions regarding percentages of allocations are only followed in the major projects, whereas the minor ones are looked after on the basis of public requirement through applications. So, there is not such hard and fast allocation in case of Kharun, which falls under the minor category. And hence, informal water access regime will play an important role in determining access, also in absence of a regulatory institution. The policy also focuses on industrial effluent and domestic sewage treatment, before releasing it in water bodies. It also seeks ensure water security to the entire population by ensuring appropriate institutional and legal frame work in the water sector for supply of water to the various uses/users (GoCG 2012, 4).

### **iii. Anicut policy and WRD's regime influence**

In absence of a regulatory authority, and since the legal framework of the state vests powers in the hands of state government with respect to the water resources in the state and interventions over it, the WRD is the nodal agency which looks after the requirements made on small rivers and minor projects. This again gives a scope informal access to water from water bodies. According to the primary data gained from top level bureaucrats of Water Resources Department (WRD) and its Mahanadi project, it was known that the department approves the purpose of water use on 'demand' basis', along with some formal procedures, like an application to WRD.

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<sup>4</sup> *Nistar* or *Nistari* is generally used as a local word for domestic use, as per the literature, but in legal terms it is has a connotation of usufruct nature / usufructuary rights over water for domestic purposes.

These demands for water are accepted in form of formal official order from state executives, or a formal demand made by local authorities, MLAs, Gram Panchayats, etc. These proposals are furthered in the state's annual budget and then it gets approved. Section 6 (1) and (2) of the Chhattisgarh Regulation of Act, 1949 which prescribe procedures on application for use of water from a natural water source, gives the state government discretionary powers to the state government to accept or reject the application for such a use, and thus access. The actual or *de facto* discretionary power over this matter is delegated to WRD, which then decides. This power has been effectuated by the notification of state water policy of 2001 to the WRD (GoCG-WRD 2001). The Chief Engineer of WRD, Mr. H R Kutare said in one of the Focused Group Discussions, "Our proposal and estimated costs on such anicuts appear in the state budget, then the onus to approve such proposals or reject then lies in the hands of government. If proposal gets approval in budget, then the project proceeds. But usually they do not reject the proposals that we send for the annual state budget."

For example, there are 21 minor anicuts built on Kharun River in Raipur district as of 2016, according to WRD's records (WRD 2016). Of these, the initial ones were built some 40 years ago near Raipur city on the upstream of river to ensure intake of water to be supplied for drinking purpose to the city. For the same, proposal was made by the then local authority of Raipur, and the WRD approved their proposed demand to store water in anicut near Bhathagaon. Gradually, water has been diverted from Gangrel reservoir, located some 90 Km away from Raipur on Mahanadi, to Kharun river through Mahanadi branch and main canal (See figure 3). So, these initial anicuts near Bhathagaon were exclusively meant for supply of drinking water purpose. Similarly, the other anicuts have different uses and ownerships as defined in their respective proposals or orders and agreements. WRD's Chief engineer and subordinate engineers informed in the FGD that State Water Resource Utilization Committee (SWRUC) (*Rajya Jal Sansadhan Upyog Samiti*) decides the allocation from reservoirs at a bigger level. It is a joint committee of relevant departments chaired by the Chief Secretary of the state. They also said if diversion for KRDP is required then decision for new allocation will be jointly made. The committee includes engineers and secretaries of different departments as its members.

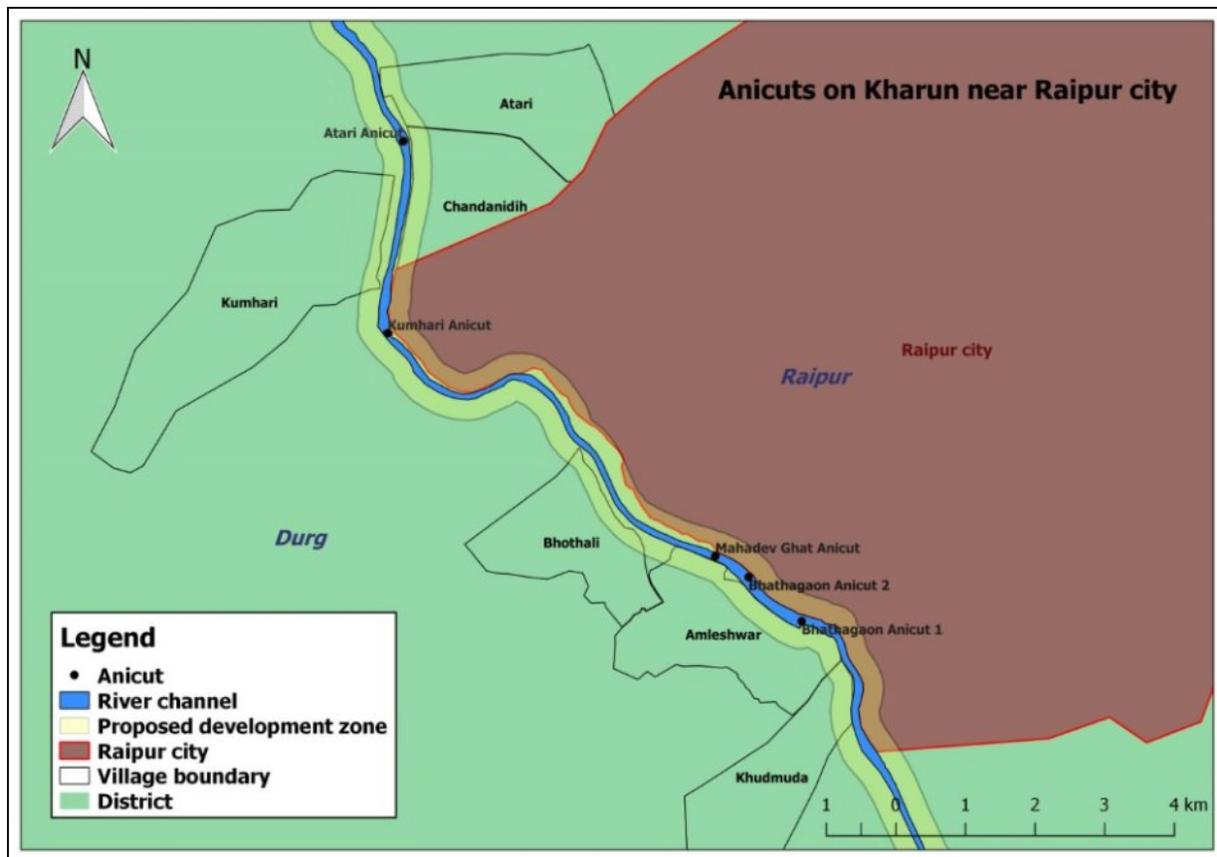


Figure 9: Anicuts on Kharun near Raipur

So the river has been cut into different anicut specific uses under the formal access regime, which overlooks the other provisions and river dependent uses, for example fishery policy of the state just states that rivers are open and free for fishing without any permission or leases. It has elaborated directives on fishing in lakes and tanks, but for river it states that river is free for fishing to every person (GoCG-Fishery-Policy 2003). However, it does not consider the nexus with the policies of other departments. If there is not fish left in river due to different interventions, how can there be ‘free-access’ to the river for fishing activity? From the above example it can be seen that the WRD has resorted to anicut policy on ad hoc basis, instead of looking at the larger integrated picture of the river. And hence we find that there has already been a regime change since these anicuts were built near Raipur to cater to the needs of expanding city. The Minister for Public Health and Engineering Department had also conceded in an interview, which is a part of the primary data that the anicut policy is to increase the irrigation coverage, and the government’s primary focus in terms of water resources allocation is towards irrigation use and access to water. But near cities like Raipur the anicut policy, is urban

anicut policy, which emanates from the needs of urban expansion, unlike the state level anicut policy.

These anicuts have repercussions on several other aspects like access to downstream, effect on livelihoods, pressure on upstream water resources, etc. For example some fisherpersons from Nishad community said that anicuts have increased water hyacinth and concentration of contamination in the downstream of Mahadev Ghat, and it has reduced their catch drastically, as it impedes fish breeding. The existing ad hoc ‘anicut policy’ is one of the reasons for loss of water access to the downstream, and thus livelihood opportunities. Such a policy of WRD can also be seen as a quick solution to rapidly increasing urban and industrial demand for water.

Sr. no.	Anicut name	Authority in-charge	Water storage capacity (MCM)	Proposed irrigation potential (Hectare)
1	Bhathagaon 1	Raipur Municipal Corporation	N.A*	0
2	Bhathagaon 2	Raipur Municipal Corporation	NA*	0
3	Mahadev Ghat	Raipur Municipal Corporation	0.42	50
4	Raipura	Raipur Municipal Corporation	1	0
5	Kumhari	Railway Department	N.A*	0
6	Atari	Dharsiwa Tehsil	0.2	0

**Table 4: Anicuts on Kharun near Raipur city with their different purposes and authority in-charge (WRD, 2016)**

**\*Note: N.A means not available in the secondary data table**

Water demand due to urban sprawl and industrialisation has eclipsed the indigenous water demands of different communities settled on lands abutting Kharun. These aspects have already set into motion a prolonged transition in water access regime in Kharun near Raipur. However, the riverfront development policy of state will further exacerbate this transition, as the policy hit the bull’s eye, which is the waters of Kharun, by bringing in different riverfront interventions demanded by urban sprawl on Kharun – the urban recreational, entertainment and riverfront housing demands. The Joint Director of the Town and Country Planning Department had said in the semi-structured interview, that they will try to make use of existing anicuts, however in the

Request for Proposal document of the initial plan of KRDP there was a proposal for new anicut exclusively meant for water sports and recreational use.

#### 4.4.2 Current informal regime

The peculiar urban centric anicut policy, emanating as a short term solutions at micro level with in states, is one of the reasons for emergence of informal regime. In Kharun's case near Raipur, informal regime is reinforced more because of ambiguity over operational policy details of formal regime; subsequent ambiguity over implementation and development of water bodies and ad hoc approach towards building of structures on rivers, and other water bodies. Moreover, lack of regulatory authority to control and monitor the water access regimes and use, is another reason for development of informal regime comparatively more near Raipur than other areas, where the socio-spatial characteristics and land-use are a mix of urban and rural. Also the ad hoc and short term solutions of anicut policy near Raipur has facilitated emergence of informal water access regime.

The anicuts where water diverted from Ravishankar Sagar reservoir reaches Kharun, namely, Bhathagaon anicut 1 and Bhathagaon anicut 2, is the most perennial stretch of Kharun near Raipur, followed by the subsequent stretch downstream of Bhathagaon 2 anicut till Mahadev Ghat Anicut. This perennial nature is because of the impounding of water through formal water access regime of anicut policy and powers that WRD enjoy. These anicuts were primarily proposed and built to take water for city water supply only. There is no provision for irrigation use according to the proposed use which was approved by WRD some 40 years ago when the anicuts were built, as the Chief Engineer of WRD had conceded in the FGD, as per the then proposals and agreements with the Raipur Municipal Corporation. The WRD's Chief Engineer and Chief Engineering (monitoring) also said that these are exclusively meant for city's drinking water supply. They also said that the anicuts upstream and downstream of Bhathagaon anicut are open for *Nistari*. Although they defined *nistari* as non-productive uses like domestic use, water used for bathing, etc., there is no operational definition of *nistari* whether it broadly means domestic, or does it also include usufructuary uses like the use and access of Kharun's water for livelihoods. This ambiguity remains a crucial question in terms of water access regime on Kharun near Raipur, leading to increased informal uses, or we may say unrecognized formal uses, since many of those uses have prevailed with indigenous communities' uses even before

the anicuts came up through formal access regime, but were not recognized by the formal regime.

It was observed and known from the primary data that the landed people in Amleshwar and Khudmuda villages who own land abutting Kharun, in the aforementioned perennial stretch between Bhatagaon anicuts, directly lift water from Kharun River through pumps. Some portion of these lands even submerged when water is diverted from Gangrel dam. However, the common response of landed farmers was that they have been taking water from Kharun from times immemorial, and they will not stop doing so. However, there some land parcels bought by people from Raipur city, especially in Amleshwar who also access Kharun's water for irrigation when they cultivate their lands by hiring farm labour. So, most of the informal water access regime is regarding productive water access for agriculture. Journalists from Nai Dunia news and Patrika news, who covered the issue of KRDP very closely, told that Amleshwar and Khudmuda are the villages which supply around 80% of vegetables to Raipur. It is all because of the perennial stretch of Kharun and continuous inform access that they get.

Interim revised city development plan report of 2014 by for Raipur published by Crisil terms use of water for irrigation from Bhathagaon I and II, Raipura and Mahadev Ghat anicuts, which are meant to supply drinking water to Raipur, as an illegal use (MoUD-CRISIL 2014). Since the water has been appropriated by Raipur Municipal Corporation (RMC) with WRD's permission by building these anicuts, it mentions that CRISIL has rightful claim over it (MoUD-CRISIL 2014). However, the access to Kharun's water for nonproductive uses such as livelihoods and domestic uses, also need to be considered. So, it is very difficult to separately monitor those in absence of a regulatory authority for water resources, especially during the lean period in summer season when water from Gangrel is diverted for city's drinking water supply. The Chief Engineer of WRD said that it has been WRD's policy to keep access to the river open as far as possible, and we cannot completely claim that it is illegal. He agrees that it is not a part of formal regime. His denial of it being illegal is because of ambiguity emerges from the absence of detailed operational rules and definitions as mentioned earlier.

Another major informal access regime was captured in the downstream of Bhothali on Kharun. It is largely regarding brick kilns in the downstream area near Sarena village. The latest revised master plan 2021 of Raipur talks about sections of interventions for riverfront development.

Regarding brick kilns, it plans to resettle those kilns towards further downstream as they are harming the river's environment (CTPD 2011). From primary data collected from Kumhari, the Supervisor of one of the brick kilns conceded that there are total 9 brick kilns which access river for clay from its bed and channel, and not water. However, he and another kiln worker mentioned that the workers access and use river water for domestic use, except during summer season when it is covered with water hyacinth and concentration of contaminants is very high.

#### 4.5 Understanding the KRDP plan and vision through hydroinclusion framework

Let us recall the framework of hydroinclusion from Chapter 3, especially 3.4., wherein hydroinclusion is defined as inclusion of marginalised people and sectors in the process of changing water access regime and use, during the process of development intervention on a water body. It is a process which responds to the new risks of exclusion and marginalisation emerging from the changed water access regime. Here the so called development intervention is KRDP's planned activities according to initial plan and as per the latest revised Master Plan of Raipur, on Kharun River, which is changing / will change the water access regime in Kharun near Raipur. These interventions involve change in land-use pattern, fencing of river bank, straightening and widening of river, commercial development, etc. To understand the changes Aubin and Varone's framework of successful strategies of water access regime change is adopted. According to the framework of water access strategies, in our case of KRDP plan and vision, the state government and its authorities (bureaucratic wing – TCPD, RDA and Housing and Environment department) in form of challengers are seeking to gain success in changing the existing water access regime, which is already in transition. Unlike Aubin and Varone's cases where the challengers were people largely, hence, the conditions of strategies are going to be different. The challenger state is seeking to change the water access regime by changing the land use pattern in the KRDP's proposed project area and seeking to appropriate its new regime by adding additional uses, which are primarily recreational and aesthetic uses of water for commercial development, recreation, tourism, environmental sustainability, etc.

The incumbents in KRDP's case are the ones who are a part of current water access regime, which are the Raipur Municipal Corporation; people dependent on Kharun for their livelihoods; farmers and those owning land abutting it. While seeking successful regime change the state is in

negotiation with the current water access regime. Again, success is defined as a situation where the challenger has gained the rights to use the water resource, which can take legal forms, (Aubin and Varone 2013). For the challenger state of Chhattisgarh to be successful in changing the water access regime with its new set of use and access, the behaviour of the incumbent must change by altering current use and access, and making space for the new entrant-use and access of the challenger state, which are recreational and aesthetic uses (Aubin and Varone 2013, 155). In successful water access there is resolution of rivalry, which can be described as incompatibilities over use of water between two or more users for their respective uses (Aubin and Varone 2013). However Aubin and Varone have also made a crucial statement which is true to the case of KRDP's initial plan –

*“The social and political recognition of these new uses cannot necessarily be met with positive sum (win-win) agreements, where everybody is better-off. Redistributive claims inevitably create disputes between local users and, if the issue expands, political conflicts at a more general level.”*

Further, we shall focus on the following strategies emanating from the aforementioned threefold conditions of gaining success -

1. Activation of ownership of property rights (AOPR)
2. Activation of Public Policies (APP)
3. Vital Characteristic of the Resource (VCR)
4. No Cost for the Incumbent (NCI)
5. Best Alternative to a Negotiated Agreement (BATNA)

In the challenger-incumbent negotiations of KRDP, the challenger state already tried using the first strategy of AOPR which is a rule activation strategy, wherein, the state tried to invoke one or the other rule to defend its rights to a resource. In this strategy, the legal provision(s) is / are brought to rival's view (incumbents in this case), and then these rules becomes operational once in use (Ostrom 2005, 138) (Aubin and Varone 2013, 159). The challenger state had proposed land acquisition in the proposed project in the initial plan, which is AOPR under the eminent domain. The feasibility assessment survey reports also mentioned the riverine land parcels as

government owned lands, which were not privately owned. It has been a common practice in India where state adopts eminent domain approach, where in fact the CSOs and communities from ground zero argue that it is a common pool resource (CPR). Moreover, the plan also envisioned acquisition of private lands, if accusations and news reports are to be believed. So, it is also a kind of AOPR where the state acquires private land for development purposes in national interests, especially after negation of Right to property as a fundamental right.

If the cost of AOPR in water access is high, which is actually high in case of KRDP then, the challenger state could resort to APP. The Chief Engineer of RDA had said in interview that the estimated cost of land acquisition and development of 1 km of stretch could be roughly around Rs 200 crore. In such a scenario APP could be activated. Challenger state may activate public policies that benefit them (as final group – urban and elite beneficiaries) in order to improve their access to the resource. This condition maintains the similar idea of AOPR, but challenger refers to a public regulation and intervention through government policies. Now this is the current phase which the state government has adopted. They are relying on the revised Master Plan of Raipur 2021, which includes various riverfront development interventions on Kharun, but on downstream area near Raipur. This comes in the light of Protests in early 2015 and challenger state 's unsuccessful water access regime change through AOPR strategy.

The third condition of VCR is very much applicable for the incumbents in KRDP case, where as in the original framework it is used from the point of view of challenger. But in our case the resource is vital to incumbent, because livelihood and drinking water needs and uses of water are of more essential nature. In our case the incumbents may be granted or prioritised access given the vital character of their use, or their access regime may not be changed: “Appropriators depend on the resource system for a major portion of their livelihood or the achievement of important social or religious values (Ostrom 2005, 244).” The vital character means that the good or service cannot be substituted from the point of view of the user (Aubin and Varone 2013, 160). This debate can be seen from the lens of water as ‘luxury good’ vs. water as ‘necessity good’ in the parlance of economics. Incumbents may seek to secure the current regime under their fundamental right to life where right to water can be implied in court of law.

Lastly, the NCI and BANTA conditions are not much applicable, because according to current plans there is no possibility that there will be no costs borne by the stakeholders of current water access regime. The costs are certain. Also the negotiation and formal agreement part of BANTA is a farsighted argument, and could only be speculated on the basis of further developments about the riverfront interventions. The KRDP interventions, both planned and currently underway through WRD, were received with protests. However, the protests were concentrated in the villages upstream from Bhothali, and not in the downstream villages. And hence, here onwards the lens of hydroinclusion can be used for sub-stories or sub-cases of the upstream story and downstream story separately, to analyse how these conditions have played in terms of responding to changes and probable risks of exclusion and marginalisation when it comes to hydroinclusion. Furthermore, this framework will help in speculating whether the project will conform to hydroinclusion considering the present situation and developments, on the basis of perceptions of respondents from the field. In the first condition of AOPR there was a protest, the second conditions perception is also negative, which are discussed ahead. So the third condition is strong in KRDP's case and vitality of the water resource has increased bearing on risks of hydroexclusion. Both the spatial units have distinctive set of problems and perceptions about the project. Also the riverfront land uses, which determine access to river, are different in both the cases.

## 5. The upstream story

As discussed earlier the upstream and downstream stretches of proposed project area, are socially, spatially, politically and economically different areas, with Bhothali village as the reference point. Their land-use patterns are different and, hence their water access regimes are different and would have different probable implications. The following is the downstream story.

### 5.1 Manifestation of conflict: Response to initial plan

The plan and initial activities of the authorities was received negatively by people and civil society organisations in the upstream. The expression of conflict in form of protests against KRDP near capital city of Chhattisgarh, Raipur, started conceiving in late 2015 (Patane 2016). WAPCOS (Water and Power Consultancy Services Limited) was appointed as the consultancy firm to carry out preliminary feasibility assessment for the project. Survey of villages upstream

of Mahadev Ghat, which was out of purview of proposed area as per the Raipur Development Authority's (RDA) Request for Proposal, but became a part of survey meant to delineate SADA, became immediate reason for emergence of conflict. Villagers were agitated, especially those belonging to Gram Panchayats which were not informed about the survey. Protests were spearheaded by Rashtriya Kisan Kranti Morcha under the leadership of its president, Mr. P S Tripathi. On detailed semi-structured interview and discussions with P S Tripathi, crucial insights of protests, mobilization, network, interests and behind the scene issues were known.

People from prospective affected villages, mostly land owning farmers, and otherwise, were mobilised under the banner of a Chhattisgarh based Civil Society Organisation named, *Rashtriya Kisan Kranti Morcha* (RKKM), headed by Priya Sharan Tripathi. Series of protests erupted in Amleshwar, Bhothali and Khudmuda villages, situated abutting the Kharun River in Durg district, in early January 2016, which continued till May, 2016. Protests involved *Gheraos*, *Jal Satyagraha*, FIRs (First Information Report), marches and sloganeering.<sup>5</sup> On 28<sup>th</sup> December, 2015, the first meeting was held at Amleshwar to mobilise people from Amleshwar and Bhothali villages. That was also the formation day of RKKM. Till 12<sup>th</sup> January 2016 meetings were held almost every day. On 19<sup>th</sup> January RKKM organised a protest rally and March against WAPCOS and its survey on Gandhian principles. On 8<sup>th</sup> March they had organised *Gharao* at sub-district magistrate's office the whole day to have clarity about plans of government. The SDM arrogantly said that they will acquire whichever land they want, and whenever they want, as per the government orders, and that they only follow government orders, nothing else. It was recorded and is available on RKKM's you tube channel.

During the same time, a protestor named Sudesh Tikar, went on for 45 days Satyagraha by partially submerging himself in Kharun River. On 12<sup>th</sup> March they had called Pradesh's farmer's core committee meeting at Mahadev Ghat. Police had threatened to lathi charge and told us to disperse even after taking permission. Two of the farmer members were held at police station without any warrant till midnight. However, the station inspector of Amleshwar said that they were made to wait because of shortage of staff, when interviewed.

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<sup>5</sup> *Gherao*: A way of protesting where protestors encircle buildings or individual(s); *Jal Satyagraha*: partial self-immersion into river



**Figure 10: P S Tripathi (first from right) directing villagers of Bhothali and its Sarpanch to initiate protests against Durg District collectorate regarding 'green belt' issue in riverfront in May 2016**

In late January on 21<sup>st</sup> 22<sup>nd</sup> and 23<sup>rd</sup> January to be precise, villagers protested by removing the survey markings set up by WAPCOS and held a funeral march of those marking poles in protest. They also question the legality of WAPCOS who had surveyed some villages without notifying its Gram Panchayats and people, including Bhothali and Amleshwar. Simultaneously, there were statements from the government officials that the project will be exclusively developed on government land and no private land will be acquired. But, we demanded an official statement.

Largely, the conflict started evolving around prospective pressing issues of riverine land acquisition; loss of livelihoods; changes in riparian rights and access regime. The conflict was covered by print and electronic media at regional level. Tripathi claims that he played the media according to his wish. A journalist from Patrika news and an anonymous convenor of a CSO conceded that Tripathi's close relative is a chief editor of media house and, his network in political leadership is well known, including Chhattisgarh's former CM Mr. Ajit Jogi. Also Tripathi enjoys immense respect from people, as he is a celebrity astrologer in Chhattisgarh, who appears on a daily horoscope program of the most famous regional news channel. In late January, 2016, as protests intensified, the Chief Minister of Chhattisgarh, Raman Singh, assured in one of the zero hours of the state's Legislative Assembly, that the government would not acquire private land (Patrika 2016). He also assured that the project would only be developed on government owned lands (Patrika 2016). This assurance dissipated the protests. One of the

prominent journalists, who is Tripathi's close acquaintance told Tripathi that, the Environment Minister told him off the record, may be in lighter vein that, they shall acquire land by will of baton ("*dande daal ke le lenge zameen.*").

Gautam Bandopadhyay of the Nadi Ghati Morcha, who had initially supported the protests, but later backed off after knowing the P S Tripathi has vested interests, which is discussed in 5.2.3 section, sarcastically says, "There are some people (like Tripathi) who talk about saving the river, when they do not even have water at hand, in their eyes and yet they talk about water. They (Tripathi) have captured, controlled and stopped the voice of the people and their dissent to such projects, this is a win-win situation for the state." Tripathi also has his vested interests in conflicts and a political aspiration to enter into active politics, which he himself acknowledged in the interviews.

## 5.2 Socio-spatial aspects, land market and land-use in upstream

### 5.2.1 Spatial aspects

Khudmuda, Bhothali and Amleshwar are the sample villages which were visited in upstream located in Durg district for data collection (See figure 2). It would not be a plausible idea to generalize the socio-spatial background of these three villages and extrapolate it to whole of the special area. The proposed project area in Amleshwar and Khudmuda, have private lands abutting Kharun. The land on the riverbed, which is immediately next to Kharun's channel has been appropriated and is private agricultural land. Both Amleshwar and Khudmuda are located near the perennial and least contaminated stretch near Kharun. Amleshwar is just located opposite to the intake wells which lift water for Raipur's drinking water supply. So, the stretch of Kharun near Amleshwar and Khudmuda is the most scenic stretch of the river, and that is why it is considered as potentially the best spot for tourism and recreation under the initial plan of KRDP. Many of the respondents have substantiated this fact. And maybe that is why the first phase of development in the initial KRDP plan was to begin from this area and downstream of Mahadev Ghat.



**Figure 11: Kharun's perennial stretch near Amleshwar (left bank) in month of May, 2016**

The stretch adjacent to Bhothali, immediately downstream of Bhatagaon anicut gets fully covered with water hyacinth in the month of May (See figure 4).

### 5.2.2 Social composition

*Sonker* (farmers), *Baharia* (ST) *Sahoo* (farmers), *Kurmi* (farmers), *Dhimar* (fisher persons), *Nishad* (fisher persons), *Kewat* (fisher persons), *Kumhar* (potter), *Koshta* (weavers), *Dhobi* (washer persons) are some of the indigenous communities largely found in this area. Of these, except Sonker, others belong to socially vulnerable categories of SC and OBC. This shows their dependency on Kharun for their livelihoods. The respondents in the proposed project zone of riverfront consisted mostly from Sonker, Kurmi and Nishad community. And most of these respondents are engaged in agriculture, farm labour, jobs in city and fishery. As per the 2011 census of India, the population of Khudmuda, Amleshwar and Bhothali village is 2396, 4965 and 1405 respectively. The number of population in Amleshwar is high because of migration.

### 5.2.3 Land-use pattern and land market

People from Raipur have bought land parcels (agricultural) in the Amleshwar village, because of its proximity to city and access to Raipur-Durg-Patan road which passes through Amleshwar. The other important reasons for attraction towards Amleshwar is the scenic nature of its

riverfront and most importantly availability and access to water from river and ground. Also the earlier expansion of Raipur happened was towards the southwest, where these villages are located in the upstream. The upstream area is closer to the city centre than the downstream area. So, these bundles of reasons have attracted people to Amleshwar village. Sahoo, Sonker and Kurmis are the landed communities and, Kewats, Nishads, Baharias, Dhobis, Kostas, etc are landless communities, largely.

A respondent named Bhupendra, who bought a 2 acre riverfront land parcel in 1990s said, “I bought this land in 90s when there was a trend of investing in this area, which continues even today. The cost of land was cheap, and anticipating that Raipur would expand people started buying. I also bought land here as investment. Back in those days when I bought, Chandanidih and Sarona were not developed and people did not see it from investment perspective. I wanted to invest to plan my retirement, and hence I invested here. Another reason was the location. Being located near river we were assured of good water availability in tube wells. Water is important and, hence I bought this parcel of land.” He hired farm labour to till his land and spends his retired life at his farm house. In 1990s he bought this 2 acres land parcel for Rs. 2.80 lakh per acre price, which now costs around Rs. 45 lakh per acre. Current land rate of Rs. 45 lakh was the response of interviewees in almost all of the interviews in upstream sample villages. Similar case is with Khudmuda village, except that the migration aspect is not there. However, the station inspector of Amleshwar who is a resident of Khudmuda said, “Only 100 indigenous families have left today in Khudmuda, because of migration and land grab by deceitful means by rich people and big landlords.”

It is a known fact that P S Tripathi, the President of CSO- Rashtriya Kisan Kranti Morcha (RKKM) spearheaded the protests against KRDP by mobilising people from Amleshwar, Khudmuda and Bhothali. Tripathi’s being a priest by profession is also the chief priest of Amleshwar Dham Temple located on his 6.18 acres land abutting Kharun in Amleshwar, which was coming under PPA’s purview. Apart from Tripathi’s land, a convenor of another CSO anonymously revealed that the State’s Principal Secretary Mr. Rawat and, Secretary (IAS) of Tourism Department, Mr. Mishra, among other government officials own land in Amleshwar, immediately abutting Kharun’s channel and that is why the conflict was strong in upstream because of the vested interests of Tripathi and others. He also believes that they have a strong

nexus. Moreover, there after declaration of KRDP's proposal and preliminary work, there were housing projects, which were advertised foreseeing rise in land rates in future. Rishi Kumar, a builder and promoter of Wood Island colony riverfront housing project in Amleshwar said as an interviewee, that the per square feet land rates have almost doubled after announcement of KRDP. KRDP has affected the rates positively for the first time. It was Rs. 600-1000 per sq. ft. just before KRDP.

Bhothli, a village with a population of around 1405, is most probably the only village whose Nishad habitation completely falls in the delineated area and, is settled on government land called as *Kabil-kasht* land. It is a type of class II land occupancy where the land is inheritable, but not transferable, except with prior permission of the collector (Joshi 2006).<sup>6</sup> These lands (*Kabil-kasht*) were distributed among the landless people under 'Grow more food Scheme' in 1948 (Joshi 2006, 44).<sup>7</sup> Probably, this is why it is the most active village in the protests along with Khudmuda and Amleshwar, as they are most vulnerable in terms of resettlement. Gautam Bandopadhyay, convenor of Nadi Ghati Morcha and an eminent river-environment activist of India said when interviewed, "Near Bhothali, along the river they have built a road and are widening it. Lands on both the sides of road are plotted and have already been sold in the market. There is a huge real estate development from there till Mahadev Ghat. This change is an indication of river economy which is already on verge of collapse. Since the land is close to river it has a commercial potential in a market for real estate."

One of the inputs from P. S Tripathi and Gangaprasad Nishad (Bhothali's Sarpanch) regarding the land market of this area unravels the grim picture of land deals where buyers are buying lands from farmers by paying them token amount of around Rs. 2-3 lakhs by making an agreement on stamp paper, but they are not paying the farmers the whole amount for five to ten years together. Station inspector said in interview, "Agents even sell, or grab you may say, a land parcel worth Rs. 10 crore for a token amount of Rs. 2 lakh." P S Tripathi also points out land-liquor-acquisition nexus where many of the people in Raipur, especially farmers, also from the special area are addicted to liquor. Their attachment to liquor increases their need for money to

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<sup>6</sup> Sudhakar Rao Joshi, *Functional review of the Maharashtra state departments: A step towards Good Governance (Detailed report II: Revenue Department)*, Research and Documentation Centre, Yashwantrao Chavan Academy of Development Administration (YASHADA), Pune, March 2006. p. 44. <http://tinyurl.com/jsazg26> Accessed: May 31, 2016.

<sup>7</sup> Read more. Ibid., p 44.

buy liquor over a period of time. And this dependence makes them sell their valuables, and even their land eventually. This whole trigger has made land acquisition easier according to P.S Tripathi. He further concedes that farmers become landless labourers, and landless labourers become downtrodden and poor over a period of time. He is of the view that farmers of this area may also meet the same fate due to this project. The station inspector of Amleshwar also conceded similar statements regarding liquor addiction and land grab. However, he refrained to name the agents involved in such businesses.

### 5.3 Current livelihoods situation and water access regime in upstream

Agriculture, animal husbandry, fishery and farm labour are the prominent sources of livelihoods which were identified in the upstream.

#### 5.3.1 Agriculture

The upstream area is highly fertile with availability and access to water from Kharun and ground round the year, which helps produces a bumper crop of vegetables. According to Manish Singh, (journalist Patrika news) who covers the news over KRDP and a respondent for this case study, this area supplies most of the vegetables to Raipur city followed by Arang block area. But, except this stretch of area, no other area has perennial source of water and can ensure continuous supply to Raipur, even in summer season. The project will lead to loss of livelihood on large scale according to him and it will affect this well run economy of farmers.



Figure 12: Farmlands in Khudmuda, abutting Kharun in the month of May, 2016

Another journalist namely, Anuj Saxena from Naidunia news agency who covers the same issue, had a slightly different view. He opined that though there is a considerable chunk of vegetable supplies coming from this area, it has been declining due to mass exodus of farmers after them selling their lands to people from cities buying it for investment purposes. So, there has already been a transition in livelihood and occupation pattern due to urbanisation and urban sprawl. Bhuvaneshwar Sonker, a farmer belonging to *Sonker* community owns 12 acres of farm land just 100 metres away from Kharun River in Khudmuda village where he grows vegetable crops for three seasons round the year. He said recently, that is around April 2016 (a lean period), cultivation of tomatoes on 1.5 acre of land earned him about 2.5 lakh rupees. This indicates the quantum of prospective loss if the project involves acquisition of such lands. Similar, is the situation in Amleshwar and Bhothali, However, majorly people in Bhothali do not cultivate lands in summers due to lack of water access, as it is downstream of Bhathagaon 2 anicut and, hence gets covered with water hyacinth in summer season.

### 5.3.2 Bovine

In Bhothali's FGD it was noted that each household owns 5-10 cattle they roam around on the banks of Kharun in search of *Pehra* (fodder). They consume *Pehra* on the banks of river which grows naturally. People hardly feed them separately. They are good source of milk and manure, which adds on to our dietary and energy requirements. They said these days pollution has increased in Kharun and their cattle are suffering from diseases due to it. Those diseases were not there earlier. They drink the polluted water and fall sick at times. Similarly, almost every respondent in Khudmuda said that they own cattle. In Amleshwar few respondents own cattle, which are dependent on Kharun.

### 5.3.3 Fishery

There were respondents who said many people in these three upstream villages are dependent solely on fisheries for their subsistence, livelihood and income. Others from fishing communities like Nishads and Kewats do fishing part time for subsistence. Tameshwar Nishad, a young fisherman from Amleshwar said, fishing is his only livelihood, with a normal daily catch is around 5 kg. Catch depends on availability of fish in this area. Rohu, Katla, Kushi and Kothdi are some of the types of fish he catches. Although Kharun near Amleshwar has a good fish population because of perennial nature of the stretch, catch varies highly day to day. There days

he hardly gets 2 kg of fish. These days rarely he rarely gets a catch of 10 kg on a single day. Those days are gone when we used to catch 10 Kg per day consistently near Amleshwar. Depending on this the monthly income is never steady. It ranges somewhere between Rs. 10000 to 12000 per month. Only in month of he gets a good catch. Three years ago during the same time he earned Rs. 18000 to Rs 20000, which is once in a blue moon. The demand for fish has also risen since there is a shortfall in catch, he said. But the catch near Bhothali, downstream of Mahadev Ghat has reduced drastically.

An article from India Water Portal on Kharun's contamination and health impact is indicative of river water contamination and its implications on fishing. A Nishad fisherperson said "The contaminated water has killed 90 percent of the fishes in Kharun River and have snatched more than 1000 fisher-folks of their livelihood in the region in just one decade. Now, most of them have become labourers (Purohit 2016)." However, high concentrations of contaminants can also be attributed to lowered discharges in the downstream of anicuts, as anicuts impound water.



**Figure 13: Fishing activities in upstream villages of Kharun in May, 2016; near Bhothali and Amleshwar**

Another fisherperson from Khudmuda, named Bandiprasad Nishad says, fishing and farm labour is his source of income and livelihood. Khudmuda has a good catch of fish, especially Rohu and Kulsi. He sells it in Amleshwar market. Normally he gets a catch of around 3-4 kg Rohu on a day. It earns him around Rs. 500 on such a day. There are many days when he hardly get anything. So, it depends upon catch. Maximum he earns around Rs. 15000 a month from fishing, if the catch is good. Or else it can also be around Rs. 6000-7000. Fishing communities are also involved in agricultural activities as the demand for farm labour is very high in upstream villages due to perennial access to river's water. People are aware that the river is open for fishing.

However, there is no fishing co-operatives, like *Matsya Mahasanghas*, which are found in other parts of Chhattisgarh.



Figure 14: Boats of fisherpersons near Mahadev Ghat (Image source: India Water Portal)

#### 5.3.4 Water access situation

Most of the respondents conceded that they use pumps to draw water directly from Kharun. Those who are not located abutting Kharun, use ground water for irrigation. Almost all of the responses from farmer in upstream said that they have never faced ground water shortage and, that they strike groundwater just 8 to 20 feet below ground water. They strongly attribute this fortunate situation to Kharun's proximity and perennial nature of the stretch near them. It is obvious that stream and rivers are lines of discharge, and hence the riverine lands are bound to have water in their unconfined aquifers in most of such cases. It is very crucial for those who are living near river in terms of water access.



**Figure 15: Villagers showing one of the springs which they use for washing and cleaning purpose; besides Kharun near Bhothali covered with water hyacinth in May 2016**

A fisherperson from Bhothali was of the view that Kharun is their life giver. Kharun is like mother to them, the one who takes care of them like a child, nurtures them. He said, “A farmer has farm to till, likewise this river is our farm.” Apart from agriculture and fishing cattle also access river’s water for drinking. People also use water from Kharun for domestic purposes like cleaning their cattle, bathing, washing, etc. Respondents from Bhothali said in FGD that earlier people used Kharun water for bathing and it was drinkable. Now, people only use it for cleaning purposes. They also wash utensils with the spring water on the banks of the river, wherever there are springs. Springs also contribute to river’s water discharges in form of base flows.

#### **5.4 Probable implications on the water access regime, land-use and livelihoods**

On the basis of current water access regime, riverine land and livelihood dependencies a speculation can be made on the basis of probable interventions of riverfront development envisioned till now. To speculate the probable implications these components will also be substantiated with the perceptions of respondents from the sample villages representing different communities and livelihoods with regards to change in access to water, livelihoods and land-use. In the upstream area the WRD has already started the work on Kharun riverfront development

with primary aims of protection and conservation of river, with the first phase of intervention costing Rs 39.672 crore. For the same, they have started pitching the river bank with stone and concrete; fencing the river bank and undertaking tree plantation of the bank (WRD 2015). Most of the pitching work has begun in upstream. The fencing and tree plantation work has begun near downstream areas.



**Figure 16: Pitching work on Kharun's bank by WRD near Mahadev Ghat (Source: India Water Portal)**

Considering this intervention, people would not be able to use spring water for cleaning and washing purpose or *Nistar* use, like the one which was previously mentioned in Bhothali. The anicut policy will also impede the fish breeding. Gautam Bandopadhyay, convenor of Nadi Ghati Morcha said that there are long term losses in interventions like anicut building and bank pitching, like siltation in anicuts and submergence area, flooding, reduced discharges in the downstream, etc. From the respondents in the upstream samples village it has been understood that they have a strong negative perceptions about the project, change in water access regime and subsequent changes in their livelihoods. Since the contamination is low near the upstream villages as compared to downstream villages water access has been appropriated for more uses in upstream. Most importantly, the probability of including productive uses in Agriculture, which also caters to the daily waged income sources of landless and needy.

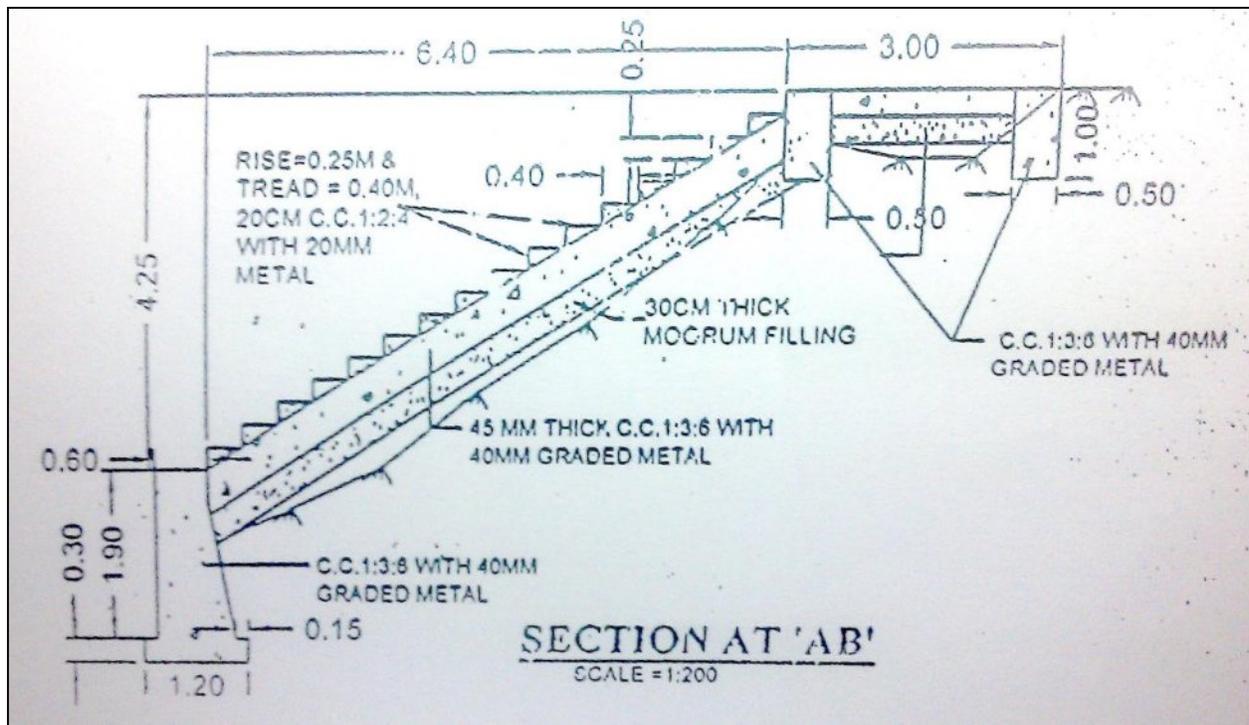


Figure 17: Vertical section diagram of bank pitching structure (WRD 2015)

Loss of access to river's water for productive agricultural purpose will change the informal access regime and drastically affect the robust economy which the journalists have mentioned. Another contradiction would arise if the state restricts fisheries in certain stretches of the river to make it a tourist spot, because the Chhattisgarh Fisheries Act, 1948 and state's fishery policy provides a free access to river for all for fishing. It does not mention any restrictions spatially. So, it is another implication on livelihoods. Moreover, the interventions of fencing the river will impede access to river for bovine and domestic uses, which again is contradictory to state's water policy of allowing *Nistari* use. The question of land acquisition is yet another problem. Although the intense protests in upstream has pressurized government to look at downstream for further plans on KRDP, the Environment Minister's and TCPD's joint director's confession that they strongly intend to proceed with the project, and some acquisition might happen. This will change the green belt of riverfront, which in case of upstream is largely private land owned by farmers. Relocation of most people may happen in upstream, because most of the land appropriation for private ownership abutting Kharun has happened in upstream villages, as it can be seen in the photo depicting farmlands of Khudmuda.

Delving on Aubin and Varone’s framework, there thought of these prominent probable implications are the reasons for unsuccessful water access regime change in upstream area where it was manifested in form of protests, if some vested interests are to be kept aside. For a regime change for KRDP to be successful the state has not been able to garner consent in a legitimate way. In Aubin’s and Varone’s words the incumbent stakeholders, especially living people in riverine area are not ready to recognize and accept the probability of new water access regime which the riverfront interventions will bring in. They also have a fear of being excluded and marginalized, which was recorded in their responses. If landed farmers are conceding such responses, one can only imagine how the already worse situation of marginalized sections and landless communities, which are dependent on Kharun, would withstand the exacerbated marginalization and exclusion in the changed water access regime in future with a doubled negative implications. So, considering current developments and strategies adopted, the probability of hydroexclusion prevails, since the communities’ probable recognition to new change is not on the lines of state’s intention for a new regime. One may argue that this has a lot to do with Tripathi’s vested interests, but the following simple tabulated representation of perceptions of such probable circumstances and regime change in upstream sample villages substantiates that, the vision of KRDP in upstream is not conforming to hydroinclusion.

Responses	No. of respondents	Percentage
Positive	0	0
Negative	17	94.44%
Neutral	1	5.55%
Total	18	100%

**Table 5: Table showing respondents’ perception about probable water access regime change from upstream sample villages**

Responses	No. of respondents	Percentage
Positive	4	22.22%
Negative	13	72.22%
Neutral	1	5.55%
Total	18	100%

**Table 6: Table showing respondents’ perception about probable changes in livelihoods from upstream sample villages**

Responses	No. of respondents	Percentage
Yes	3	16.66%
No	13	72.22%
Neutral	2	11.11%
Total	18	100%

**Table 7: Table showing respondents' views whether KRDP should happen or not from upstream sample villages**

Thus this perceptual representation of people from sample villages, hint at initial unsuccessful attempt of state to change water access regime through the strategy of AOPR and APP, and the reason is precisely rooted in peoples' fear of marginalization in new regime that state wants to bring in with additional recreational and aesthetic use of river's water and land. Most of the respondents explained that they would not want state to impede their access which will affect their livelihoods drastically. Those who foresee changes in livelihoods and KRDP as a whole, positively, are the respondents who are not directly involved in Kharun dependent livelihoods, or are big land holders. So, the state has not been able to respond to probable risks of exclusion and marginalization in the new regime which the challenger state proposes. Hence, the vision of KRDP so far has not been able to conform to hydroinclusion with a successful regime change in a speculative sense.

## 6. The downstream story

### 6.1 Shift of riverfront development plan towards downstream

Although the protests in upstream dissipated and the integrated KRDP plan suspended after Chief Minister's assurance, the Chhattisgarh's Minister for Environment and Housing, Rajesh Munat conceded when interviewed, that the government is strongly willing to proceed with the project, because it is important for Raipur city and Kharun River. In alternative options assessment by Raipur Development Authority (RDA) for financing KRDP it was recommended, *"The River Front can be developed for Public and Recreation Facilities only. However, we believe it would not be financially viable."* (RDA, Proforma for proposed expenditure for new services 2015, 3).

As per some news reports, state government scrapped the ambitious plan of setting up Special Area Development Authority (SADA), which was proposed by the state government as the

backbone authority for KRDP by delineating a certain proposed area of land abutting Kharun River (छतीसगढ़ 2016).

The local news reports further mentioned that the state government will continue the development of riverfront irrespective of SADA, in order to make Kharun an exemplary tourist spot with gardens, water sports and a pollution free river, near Raipur. Simultaneously, the Water Resources Department has already started the concrete pitching work on Kharun and fencing the banks of the river which is not privately owned. According to recent news report, the views of top level decision makers, both bureaucrats and state government executives, indicate that the decision over further development of riverfront has been put on hold, ostensibly because of non-payment to appointed consultant company WAPCOS, and vehement doubts over KRDP's financial feasibility and technical viability (Naidunia 2016).



**Figure 18: Recent fencing work by WRD in downstream area, near Kumhari village, to protect banks of Kharun from encroachment**

The villages from the initial KRDP proposed plan, namely, Bhatagoan, Raipura, Sarona, Chandandih and Atari have been fully included under the jurisdiction of the Raipur Municipal Corporation in the latest revised Master Plan 2021 for Raipur. The master plan also envisions development of botanical gardens, picnic spots, bird-sanctuary, water-sports facilities, cultural and heritage hubs on the land abutting Kharun, in these newly included villages in Raipur city, which are located on downstream of Kharun near Raipur (CTPD 2011). The plan envisions

picnic spot near Atari, as it is close to Durg-Bhilai-Raipur highway, which is one of the main entry roadways entering Raipur. Other plans include 100 hectare zonal park in Sarona near Boria Khurd, with water sports facilities; 200 hectare bird sanctuary in Bhathagaon, Raipura, Sarona, Chandanidih and Atari, on riverfront area in the downstream.

The latest plan has been recently approved by the government, and reportedly it will be notified soon in the state gazette. It can be seen as a subtle push for KRDP under the guise of old provisions of master plan, and a focus on downstream area for riverfront development. The expansion of city into rural / peri-urban and rural areas abutting Kharun is bound to happen in one way or the other. So, the initial plan will be furthered, and the possibility of conflict in latent form prevails, because there has been no protests against the state-challenger in downstream like in the upstream.

## 6.2 Socio-spatial aspects, land-use and response to initial plan

Most of the common riverine land (government land) in the proposed riverfront project area, according to initial plan is found in the downstream. Out of 1192.97 hectares of land which was proposed in the initially planned project area, 288.34 is government land, which is only around 24.16%. Out of 24.16% most of the government land is located in riverfront areas of Akola, Kumhari, Magarghata and Kumhari villages in the downstream area as per the appendix of detailed land parcels in proposed project are in the WAPCOS' report on delineation of land for SADA (GoCG 2015). It is considered as Government land in eminent domain and on papers in common town and country planning parlance. Unlike the upstream situation where privately owned farmlands are situated immediately abutting river channel, lands in the downstream area are majorly situated after a certain distance from the river bank. This observation was made in the sample villages of Sarona, Kumhari and Chandanidih in the downstream area.

Kumhari, Chandanidih and Atari were the sample villages in the downstream from where primary data was collected. Kumhari is located in Durg district opposite of Atari and Chandanidih. Both Chandanidih and Atari are located in Raipur district and were included in the Raipur city limits after notification of Raipur Master Plan 2021 in 2007-08. However both of them have a rural characteristic largely. From Raipur, the Raipur-Durg-Bhilai highway passes between Atari and Chandanidih and crosses Kharun to enter Kumhari village on the side of Durg district. The bridge which connects the highway and Raipur and Durg is crucial and has other

Railway bridge and old bypass road. On both the sides, in Chandanidih and Kumhari, there are vast expanses of Kharun riverbed under the bridges. These expanses are being encroached by illegal bastis since past 40 years. One of the aims of WRD has been to protect Kharun from encroachment and, that is why they have recently begun the fencing work along the banks in this area. Kumhari anicut is located just upstream of the bridge, along with it intake wells of Railway department is located. Downstream of Kumhari anicut Kharun is again contaminated and gets covered with water hyacinth in summers.

Like upstream area and sample villages, these downstream villages have been originally inhabited by *Nishad* communities (fisherpersons), *Kewat* community (fisherpersons), *Sahoo* community (land-owning and landless farmers), *Yadav* community (cattle herders), *Kurmi* community (Land owning and landless farmers), *Dhobi* community (washer-persons) and *Kumhar-Kumawat* community (potters). Most of the illegal bastis in Chandanidih and Kumhari near Kharun are inhabited by migrants coming from other parts of Chhattisgarh as well as other states. However, there were no signs of protests against the project, mainly because of lack of awareness about the project among the landless poor. Those who were aware are in favour of the project as they feel it is the need of the hour to clean Kharun.

### 6.3 Current livelihoods situation in the light of water access regime

#### 6.3.1 Fishery

Respondents from Nishad community and others, who are still engaged in fishing activities in Kharun, said that their catch has reduced drastically over the years. A respondent from Chandandih conceded that they used to get a catch of around 5-10 Kg per day some 8 to 10 years ago, now they get the same catch per week earning them Rs. 1000 per week, depending upon catch. The respondent being a landless migrant labourer, this reduce cannot be taken at face value as he must not be devoting whole of his labour into fishing. Unlike him, another fisherman from Atari village belonging to Nishad community who is fully engaged in fishing as an occupation told that the catch per day is 5-10 kg per day, but it has reduced drastically over the year. Earlier, some 10 years ago, the catch was sufficient for both subsistence and sale, but now it is not viable for sale. He catches Kothdi, Kulsi, Rohu, Katla, etc., which are also found in the upstream areas.

Respondents from Nishad community attributed the fall in catch to increasing discharge of sewage and other contaminants in Kharun, along with building of anicuts, which has impeded the water discharges, as well as obstructed the fish breeding process. These changes leave Kharun-dependent fisherpersons with the alternative livelihood-opportunities, which are created by urban sprawl, or compel to adopt them. There are no fishing co-operatives or *Matsya-Mahasangha* in these villages, unlike many others which are found around tanks /lakes in Chhattisgarh. Gautam Bandopadhyay, convenor of Nadi Ghat Morcha is of the view that people from Nishad and Kewat communities have their social societies for gatherings, but that has nothing to do with livelihood improvements and fishing co-operatives like *Matsya-mahasanghas*.



**Figure 19: Fisher-folks from Nishad community fishing in Kharun near Durg-Raipur bridge near Kumhari (Source: India Water Portal)**

He also said that they are not united like the Sonkers, Sahoos and Kurmis in upstream who stay united to further their interests of securing livelihoods against KRDP. Over other communities, fisherpersons are more vulnerable to the transformations which the riverfront development projects will bring about. They were supportive of pollution reduction plan in riverfront development, but opposed the idea of anicuts.

### 6.3.2 Agriculture

Most of the people involved agricultural activities along Kharun in downstream near Raipur are found in Chandandih, Atari and Magarghata, over Sarona, which is rapidly undergoing real estate boom with many new housing projects. Like upstream villages, these downstream villages are also traditionally inhabited by land owning Sahoo and Kurmi communities who are engaged in agricultural activities. There were also few instances of landless respondents from these communities. In last few years many people from city centres have invested in agricultural land in these downstream villages, foreseeing its future value. Local farmers and migrant farmers are employed to do agricultural activities on such lands with a monthly payment ranging from Rs. 6000 to Rs. 10000.

Those involved in agriculture, grow food grains and vegetables. Primarily, varieties of rice are grown. Farmers engaged in agriculture on lands abutting Kharun lift water from the River. A respondent farmer from Atari village told that he earns around Rs. 5 lakh per annum by cultivating rice and vegetables on his four acres farm by lifting water from Kharun. Farmers engaged in agriculture on lands which are not located immediately next to Kharun, are dependent on bore wells. They conceded that anicuts have increased the groundwater level. Both, farmers engaged in agriculture on lands immediate and away from Kharun have welcomed the anicut policy of state government, but have reservations against the issue of river contamination discharged from upstream. Similar is the situation of other farmer according to their economic status and land holding. However, the number of farm land parcels in the downstream sample villages abutting Kharun, are less than those in the sample villages in the upstream.

### 6.3.3 Brick kilns

There are 9 brick kilns in Kumhari village, among many others abutting Kharun in different villages which are located in downstream. There were instances of landless migrants and indigenous landless community member-respondents working in brick kilns. Landless migrants were more into this occupation, than the indigenous communities. The Workers in Kiln are paid Rs. 200 per day. Although the Kilns are reportedly illegal, there are doubts over their leases. One of the kiln supervisor said that their kiln had got permission or lease till 2017 to dredge alluvium from Kharun's bed. The 2021 master plan has proposed evacuation of kilns in Kumhari and resettling them further downstream. There were recent news reports of action being taken against

these kilns by state government. Dredging of banks by kiln owners is harmful for river, but it also provides employment, and bricks for infrastructure development in Raipur.



Figure 20: Inside the compound of a brick kiln in Kumhari, abutting Kharun River

#### 6.3.4 Other livelihoods

Most of the indigenous livelihood activities dependent on Kharun, like pottery carried out by *Kumhar* community, cloth weaving by *Koshta* community and washing of clothes by *Dhobi* community, have shifted to other daily waged activities like carpentry, painting work, masonry work, etc, on demand. It was difficult to get respondents from each of these communities which were originally dependent on Kharun, as they are said to have shifted to other livelihood activity or have migrated to other cities to sustain their skills. Couple of respondents belonging to *Kumhar-Kumawat* communities from Chandandih and Kumhari villages in the downstream of Kharun near Raipur said that pottery as a profession and means of livelihood has declined because of two reasons – change in lifestyle and thus demand for earthenware and access to clay. One of the two respondents from Chandandih who lately left pottery said, he had to leave it because of fencing of riverbanks to avoid encroachment in the light of riverfront development activities and allotment of plots on bank for burial grounds where fine clay for pottery was found on the banks of Kharun. The other site is very far from his home where fine clay for pottery is found, near Khapri-Murra area. For him it is not feasible to travel that far daily. So in his case, loss of access to clay is the main reason for such a shift. Few of his acquaintances also left pottery, and are into daily-waged labour.

Behru Kumawat, another potter whose only source of livelihood is pottery, which is dependent on Kharun. According to him, now-a-days it has become difficult to find fine quality clay in Kharun. Some 20 years ago the quality was good. It has deteriorated because of pollution and sewage and, it is mixed with filth and sludge, which is difficult to separate. He has reduced the number of pots which he makes. However, there are places near Atari and Kumhari anicuts where good clay is still found, on which he is very much dependent. His family also uses Kharun's water for bathing and domestic purposes, except for drinking. Apart from pottery, other livelihoods of cloth washing and weaving are not reported due to absence of contact with such respondents. Apart from fisheries, many people are in daily waged labour as a livelihood source, wherein they are working as labourer at brick kilns, carpenter, mason, etc., in and around their villages or in Raipur at times.

### 6.3.5 Water access situation

Most of the marginalized communities, especially landless, migrants and landless indigenous communities in downstream villages are dependent on Kharun and, access the River for Domestic use like bathing, washing clothes, washing vehicles, etc. Fishery is actively practiced by indigenous fishing communities like Kewats and Nishads. Many fisherpersons from these social groups catch fish near the downstream sample villages. As the waters recede from Rabi season onwards, it becomes easy to access water without boats. People here do not use boats as the discharges remain low because, the river channel here is wide with gentle slopes on river bank which accommodates excess discharges.

Except for Ghats near Atari, the Ghats near Kumhari and Chandanidih are frequented by people a lot for domestic water use from Kharun. It was observed that this is the access and use for domestic use is high. Unlike upstream the numbers of domestic uses are high. There were no cases of any respondent who used and accessed river for bathing in the upstream sample villages. It means that there is high probability that people in the downstream access and use water from Kharun. There were few instances where respondents who were landed farmers or farm labourers conceded that they use Kharun's water for irrigation through pumps. Most of these respondents were found in Atari. So, spatiality and social composition are also important aspects at a local village level which determines the practices, thereby constituting its water access regime.



Figure 21: People accessing Kharun's water for domestic use near Kumhari (Source – left photo: India Water Portal)

#### 6.4 Probable implications on the water access regime land-use and livelihoods situation

From the impression of primary data from downstream areas abutting Kharun, it can be said the urban sprawl has already shifted the livelihood dependencies, from traditional to those provided by urban sprawl. However, being located at periphery of city centres, it has had a tremendous implication on the reliability of such transformed livelihoods. Even the landless migrants and indigenous communities' respondents conceded their desire to get any better employment opportunity, which can be reliable while speaking out their views on riverfront policy and opportunities. It showed that many of them are already hung in this transitory phase and, ready to accept anything better and reliable. This was not the case in upstream, where there are many landed farmers with access to a perennial stretch.

So, the outcome of riverfront development with housing and tourism as an aim will bring about reliability and betterment in already transformed urban oriented (daily waged) livelihood sources. However, such a transformation may not prove to be good for river's health and well established farmers, who could lose access to water for irrigation from river. Tourism may also create many opportunities, ranging from street vending, transport facilitation and other jobs related to tourist activities. Nevertheless this remains a far-fetched speculation in the wake of the

pace of the riverfront development projects and opposition to it. These opportunities are perceived positively by the respondents from landless indigenous and migrant communities who are struggling to search for better livelihood sources. These positive responses came in the light of heavy contaminant load in the downstream, as compared to the upstream, which has reduced the dependency on river's waters over the years. Like upstream, these villages do not have access to water for irrigation all-round the year, especially in the summers, when the river almost dries up and gets thickly covered with water hyacinth. This seasonality aspect has implications on agriculture and opportunities of farm labour which landless people are benefitting from in the upstream. However, landed people and even other landless respondents (potters and fisherpersons) have conceded negative perceptions on probable changes in land, livelihood and water access regime change, which will impede their access to river and its resources.

In an FGD which was conducted in Chandanidih basti, which is located abutting Kharun in Chandanidih village, participants said that they are financially the most vulnerable people and, they would will be the first ones to be affected if government brings KRDP project. Those who have land will get land. Since their basti has not yet got legal status and water connection, they will be silently displaced, they feel. They say that the government has not recognized their occupancy for last 50 years. The government will not even bother to give them monetary compensation, if their occupancy is not recognized by the government before the project. For them river is the major source of domestic water use in the absence of legal water connection and, also a source of food in form of fish which has become a part of our daily diet.

Nadi Ghati Morcha's convenor, Gautam Bandopadhyay, calls these probable transformations on the river and, thereby on the water access regime as a systematic manmade mechanism involving land grab, anicuts, etc., which will keep happening in the future. Claiming it as a disaster, Bandopadhyay explains the implication on fisheries caused by anicuts and more water impounding. He said that the moment they built anicuts, they stopped the entry and movement of fish in the river. According to him statistics shows that the diversity of fish has reduced in Kharun River. Fish moves upstream for breeding, which is not possible now as the river has become storage tank. Fish also move towards upstream when the discharges and water in the river reduced in the downstream areas during summer. Introduction of hybrid varieties of fish has drastically reduced the indigenous fish population in the river threatening the fish diversity.

So, for 40 years anicuts have impeded the natural processes of fish, like breeding and upstream movement. Moreover, he emphasizes that fish is an important and cheap source of protein for the poor people living along the river. People in the villages eat fish whenever they cannot get other food. It is also an income source for communities. State is also encouraging hybridized pond based fishery, and especially landless people are unaware of such a shift which will lead to crisis. He raises his apprehensions that we are thinking about alternative resources while crisis is arriving to our doorsteps.

Near Atari where the WRD has built small Ghats to access water, respondents from Atari village say that that they do not use those Ghats because of pollution and low discharges, as anicuts upstream impound more water. There were farmers who positively responded to probable regime change if more anicuts are built near Atari for recreational purpose, as it will increase the water table and benefit them with regards to access to irrigation. However, it will be a loss for the access regime which is further downstream and, out of purview of our case. So the perceptions on probable water access regime change are not inclined to positive or negative side in a skewed manner like upstream story. Here there are chances of challenger-state's success in changing the water access regime as people's acceptance and recognition for probable new regime, which is being proposed by challenger-state.

Responses	No. of respondents	Percentage
Positive	8	50
Negative	8	50
Neutral	0	0
Total	16	100

**Table 8: Table showing respondents' perception about probable water access regime change from downstream sample villages**

Responses	No. of respondents	Percentage
Positive	7	35
Negative	7	35
Neutral	2	10
Total	20	100

**Table 9: Table showing respondents' perception about probable changes in livelihoods from downstream sample villages**

Responses	No. of respondents	Percentage
Yes	10	62.5
No	5	31.25
Neutral	2	12.5
Total	16	100

**Table 10: Table showing respondents' views whether KRDP should happen or not from downstream sample villages**

From the tabulated representation of perceptions of respondents from downstream sample villages regarding the probable changes in water access regime, livelihoods and overall view about KRDP, we can arrive at a preliminary understanding of the respondents' degree of recognition of probable regime change. The proposed regime is more conducive according to the perceptions of the people in downstream sample villages than the upstream ones. But nevertheless the downstream perception per se is not inclined totally towards KRDP and probable regime change though current strategies used by challenger state until now. From the primary data, the reasons for rejection and non-recognition of the proposed project and probable water access regime by present incumbents (largely direct users – habitants) are fear of displacement and impediment to access, and its implications on their livelihoods.

The fear of risk of losing livelihoods and getting marginalized and excluded, in terms of water access regime is more among landless migrants and landless indigenous communities who access river's resources for their livelihoods which are other than productive uses of river's water. But as far as KRDP as a whole is concerned there is fairly major acceptance. However, one should also keep in mind that there has not been an influence for social mobilization, like RKKM and P S Tripathi's interests in the upstream. But the prevalence of contestation and rivalry over change in the water access regime to accommodate new recreational and aesthetic uses cannot be denied completely. So the conflict over access to Kharun's water and other resources remains latent in the downstream and overall River in the light of dissipation of protests in the upstream.

## 7. Discussion and analysis about hydroinclusion

After taking a look at the perceptions from ground zero and primary stakeholders (people in PPA) and, how does it stand in the light of water access regime and hydroinclusion framework, it is also important to look at the larger picture of involvement of institutions and decision makers. The dynamics of power between the key actors, especially the decision maker's (from

government) and heads of civil society organisations, who are trying to influence the people in to garner consensus in order to change the existing water access regime and accommodate the new one. Understanding interests of these actors is also important to speculate whether the process of Kharun riverfront development through interventional projects is ensuring and will ensure that the risks emanating out of water access regime change will respond to probabilities of marginalization and exclusion, thus ensuring hydro inclusion. While doing so understanding the processes of urbanization and influence of land market, will give us a broader idea of how the processes are at work when it comes to hydro inclusion. Understanding these processes is important, because it was found from the primary data that the water access regime is already in transition because of these processes, especially urbanization and increasing influence of land market as Raipur expands. Largely, urbanization and its certain exclusionary processes, along with non-recognition of aesthetic and recreational uses, are the reasons which were identified behind probability of hydroexclusion, which are as follows.

## 7.1 Urbanization and land market as driving forces behind changing regime?

### 7.1.1 Current transition of water access regime due to urbanization

Urbanization and land market have already initiated the transition in water access regime. The expanding urban area on the right bank of Kharun will soon reach rural areas on the left bank. Mostly, the change in water access regime from these processes is happening because of externalities (mainly river water contamination due to untreated sewage release) which they are causing to the present incumbents of Kharun's water. This is slowly and gradually changing the composition of present incumbents, especially from the side of Raipur city, wherein city is releasing sewage directly into Kharun. This can be seen as use of river water as a sink to dispose-off sewage. This use has not been recognized where the river is used for sink, although it sounds informal; we may call it sinkage use which has subtly been accommodated in the original rural centric water access regime. The need for KRDP is known to be an urban centric need, which mainly aims at bringing aesthetic and recreational value to Kharun, but conservation of river and sewage treatment is the guise, which is being boasted by the challenger-state. The heads of CSOs are of the view that if the state genuinely wants to keep the river healthy, it could also do so without KRDP. The challenge by state to change the access regime through KRDP's proposal,

will only accelerate the subtle transition, and reinforce the needs of urban area. This will be further backed by expanding Raipur and its urban sprawl.

### 7.1.2 Changing water access regime from the lens of urban sprawl

Urban expansion or sprawl in case of KRDP would fall in peri-urban category as discussed earlier, considering the location of proposed project area and its spatial features, which are a mix of rural and urban characteristics. So, in KRDP's case the sprawl can be called as suburban sprawl where the urban expansion is active in suburban areas, which are usually the peripheral areas of the city and, an interface between rural and urban area (Chin 2002). Sprawl is perceived as a negative urban form with costs including un-aesthetic development; poor access to services for those with limited mobility, such as the young and elderly; increased commute lengths, congestion and increase in fuel consumption due to low densities; higher costs of neighbourhood infrastructure; and loss of agricultural land and open space (Chin 2002). However, there is no consensus over the definition and characteristics of the phenomena of suburban sprawl according to Chin.

In case of KRDP the present and probable sprawl may be different from what Chin argues typically, because the probable sprawl would be stimulated mainly by KRDP, and hence the cost of un-aesthetic development would not be present. The characteristic of the present sprawl near Kharun is also different, because the sprawl with its characteristics has not penetrated at a greater extent in the KRDP's proposed area as of now. One of the characteristics of suburban sprawl is outward migration from city centres in search of housing. Although housing is one of the aims of KRDP, there are debates over housing as an aim of KRDP from the actors who are against the project. Opponents of the project, like P S Tripathi of RKKM, argue that Raipur already has sufficient housing capacities. In our case, neither this sprawl would be perceived negatively with most of the aforementioned perceptions, nor, it would be due to probable outward migration. But, it would rather be stimulated by the project itself.

The reasons for negative perception of sprawl would be totally different in this case, from its commonly known characteristics, except the characteristic of loss of open and agricultural space. In fact in such unique suburban sprawls like KRDP where infrastructure creates its own demand the first step of sprawl is generally change in land-use pattern by land acquisition or otherwise. This change in land-use abutting river and further interventions on those changed land-use like

building promenade, pitching of bank, widening and straightening of river, etc., has serious negative implications on water access regime and, have spatial dimensions to it as well, which were also discussed previously. Such interventions to create infrastructure on riverine land will obviously create a housing demand near the river, as it will become a recreational and aesthetic hub. In the WAPCOS' reports for initial KRDP's master plan, it is mentioned that SADA's authority will prevail from Kharun's origin till its confluence point with Seonath River (GoCG 2015, 2). This is indicative of intention to gradually extend this urban river front agglomeration throughout the river's stretch of 129 km. Keeping in mind that, such projects lead to intensive local planning debates and even conflicts, questions regarding the real purpose of the project, real beneficiaries and its environmental and social effects come into picture. Similar questions are raised by Sairinen and Satu in their literature on waterfront development problems (Satu and Sairinen 2005).

### 7.1.3 Urban sprawl and riparian rights

Such a riverfront agglomeration in future will intensify the rivalry, which takes us to the lens of riparian rights. Riparian areas are the natural pollution reducing areas. These areas are naturally vegetated lands abutting rivers and streams. It is important to preserve the riparian areas because these areas can play a significant role in managing adverse water quality impacts (SANDRP 2014). This land river interface also acts as buffer zone during floods and evens out the flood impact. In secretary of state vs. Kannepalli Jankiramayya case of Madras High Court (1915), a riparian owner is defined as – “a person who owns land abutting a stream, and who as such has certain rights to take water from the stream” (Puthucherril 2009). For a land to be called riparian, there has to be a stream flowing, and the amount of water in it has nothing to do in determination of the riparian right (Puthucherril 2009, 105).

Although there has been an initiation of advocacy demanding shift in riparian laws, one cannot ignore the existing law and cases over it. Riparian right can be traced to Section 7(b) of Indian Easements Act, 1882, which provides for –

*“The right of every owner of land that the water of every natural stream which passes by, through or over his land in a defined natural channel shall be allowed by other persons to flow within such owner's limits without interruption and without material alteration in quantity, direction, force or temperature; the right of every owner of land abutting on a natural lake or*

*pond into or out of which a natural stream flows, that the water of such lake or pond allowed by other persons to remain within such owner's limit without alteration in quantity or temperature.*  
(Puthucherril 2009) ,,

Such alterations are bound to happen on the upstream riparians and downstream riparians as well with the kind of interventions KRDP envisions, wherein most of the riparian stakeholders are farmers. Although these upstream and downstream riparian implications are at some extent out of the purview of the spatial area of our case, but those cannot be ignored when we are talking about water access regime over a river. In case of riverfront projects as a part of urban densification or suburban sprawl seeking to make a riverfront urban agglomeration, the amount of water needed for its subsequent different uses will be huge apart from its initial aesthetic and recreational uses. Hence, the riparian claim by an urban agglomeration would also be huge. On the other hand, the claims of small riparian users like the farmers or original inhabitants of rural areas would turn out to be far lesser than the big institutions like government bodies and newly setup housing and commercial hubs. At the same time in peri-urban like KRDP's proposed area, there are contiguous settlements on lands, or agricultural activities carried out in these interfaces. Such interventions have weaker claims on Riparian zones. They are not backed by legal expertise like the big institutions. Hence, their riparian claim over Kharun's water would remain latent. Also the people inhabiting on the downstream banks of proposed project area would face material alterations due to impounding of water for a riverfront agglomeration of KRDP, thereby drastically affecting their livelihoods and lives (in downstream case). Most of their claims would remain latent in absence of backing of any organisation or mobilisation for their claims. These again raise questions of hydroinclusion.

The pursuit of riverfront paradigm in the wake of urban competition is likely to overlook the claims of existing incumbents, largely farmers, fisherpersons, landless labours, etc., who are highly dependent on Kharun. This statement would be valid in the backdrop of conflicts over displacement and land acquisition which are prevalent in India. The words acquisition, displacement and resettlement have become resentful words to the affected or to be affected people from the projects especially in rural India. Land as a proxy to water has always left water to the corners of the debate, especially when it comes to implications of acquisition and displacement on rights over water. Land is the key to access to surface and groundwater in the

wake of riparian regime as a part of easement rights. Hence, riparian rights, if exercised would prove to be one of the obstacles for the challenger-state's success in changing the present water access regime around Kharun near Raipur. Land is a key to water access in many ways. Land grab or acquisition is the immediate solution to successful change in water access regime by challenger state of Chhattisgarh and its authorities seeking to bring that change through the first strategy of AOPR (Activation of Ownership of Property Rights), which was discussed earlier. However systematic, yet subtle and gradual gentrification process through land market facilitated by the second strategy of APP (Activation of Public Policy) by challenger-state proves to be a slow yet successful strategy over a time to reach out the intended regime change. In the later strategy in light of gentrification, the incumbent stakeholders (largely villagers of KRDP's initial project area) would not be even aware of the slow and subtle regime change until they face the implications of gentrification. So, in such a circumstance the incumbent's recognition does not emerge as a obstacle in gaining success in regime change as the incumbent is not aware of the subtle change, which happens over a long period of time. In KRDP's case, the strategy of APP can be seen in form of activation of riverfront development plans mentioned in the revised master plan of 2021 of Raipur city, which will be implemented phase-wise in bits wherein the incumbent would not see gentrification coming as a means of regime change. Water access regime change needs to be seen from the lens of gentrification vis-a-vis land market, in order to shed some light on the phenomena of hydroexclusion with a focus on land as a proxy to water.

#### 7.1.4 Regime change from the lens of gentrification

.David Harvey describes gentrification as the process of displacement by which accumulation of capital in the hands of upper class happens by dispossession from that of poor and lower class (Harvey 2008). Drawing from Neil Smith's explanation on rent gap, Ipsita Chhatterjee has contributed to the literature on riverfront development case studies in India, especially Sabarmati, with the on problems of displacement, marginalisation, revolution and new urban condition (Chhatterjee 2014, 143). In doing so, one of the lenses she has adopted is gentrification. Rent gap means the actual land value of a plot on the basis of its current use and the potential value if the same plot is put to "higher" or a "better use" (Chhatterjee 2014). According to Chhatterjee, rent gap draws the promoters of such ideas of re-development to create a land market of higher value, thereby creating a housing stock for the higher-middle and the higher class. This process brings the higher class or the gentry at the city centres or the core

areas of infrastructural investments, or the main areas. In our case it is periphery, where the process of gentrification may probably seek to bring higher or middle class by selling them housing stocks and commercial spaces on riverfront.

Gautam Bandopadhyay, convenor of Nadi Ghati Morcha precisely pointed out this phenomenon in one of the semi-structured interviews, wherein in KRDP's case he says that Riverfront development is about land pooling agenda of the state. According to him this is all about making a land bank. In this process of land pooling the easiest target is land commons, so under the name of protection from encroachment they have started fencing the river bank. According to Bandopadhyay, in absence of the riverine commons the agro economy will collapse. Marginal and landless people thrive on riverine commons. This probability and claim can be triangulated and substantiated with previously mentioned P S Tripathi's view on land grab in Amleshwar and other upstream villages, where in farmer is becoming landless, and land less is becoming poor and marginalised, because of land grab by big land holders and agents, which is then sold to rich investors from Raipur city. Also Amleshwar's situation of migration and investments by elite from city was already discussed. Furthermore, Bandopadhyay also mentioned, since the land in KRDP's is close to river it has a commercial potential in a land market for real estate development. This has also been confirmed in an earlier mention of wood island city housing project in Amleshwar on the riverfront area, wherein the KRDP plan doubled the land market rates. Bandopadhyay thus claims that state is killing the commons land economy to encourage land market. Hence, gentrification is one of the subtle ways in which the present water access regime will be successfully changed by challenger-state through the strategy of APP, thereby leading to hydroexclusion of vulnerable and already marginalised groups of people, which have been mentioned throughout the discussion.

#### 7.1.5 Land market and planner's connection: Hawk's eye on riparian land?

Urban sprawl encourages land market to foray into the new territories in peripheral areas, especially when it is triggered by infrastructural development like KRDP, which further creates escalated demand for land and housing. This process also encourages gentrification and thus indirectly hydroexclusion of the marginalised and financially weaker sections. However, the town and country planning department (TCPD) of the state plays a major role in this, especially in KRDP's case. In fact, KRDP is the brain child of TCPD. TCPD plays a major role in the very

first step of infrastructure development projects, largely where changing land use pattern is involved.

The Joint Director (JD) of the TCPD of Chhattisgarh and the Environment Minister are said to be the brainchild of KRDP. TCPD portfolio comes under Environment Minister's purview. The JD had accepted in a telephonic interview that he is the brainchild of KRDP. Although the vision of KRDP came from ITPI, the plan and intentions of TCPD do not match with ITPI's vision, as also it was discussed in the previous chapters. The JD of TCPD, Mr. Zahid Ali stated when asked about sustainable development of KRDP in a telephonic interview, that they intend to do a physical plan for the river to bring sustainability. The land near river, both, government-land or otherwise, will be developed for recreational purpose. Commercial development will be done on some parts of land. He further adds, commercial development like building malls around that area will attract more people and, they will start buying and investing there. According to him, this will increase the income levels of people in that area by providing them more livelihood opportunities. Furthermore he conceded, "We shall sell these commercial plots, which will be beneficial for people. This is how there will be sustainability. We will do structural development of that area will be a commercial objective, it will develop that area." For him commercial development is important to bring in viability and then sustainability of river and its water will fall in line.

To substantiate his connection with agents and builders from land market one can always rely on his recent past, which made him an infamous town planner of Chhattisgarh. He along with the Environment minister was involved in one of the biggest housing development scams in Chhattisgarh, called as Kamal Vihar Project. He was the scapegoat who was suspended for a long period in 2013 for his involvement in the scam. The probe committee mentioned in its report that -

*"Ali during his tenure had committed irregularities while offering development permission while violating the provisions of Chhattisgarh Civil Service Discipline Rule 1965 (Rule-3) (Pioneer 2013)."*

He was suspended for approving the sale of around 9 hectare government land near Raipur city to a renowned private real estate developer of Raipur. In local news reports the Environment

Minister along with officials from revenue department were allegedly involved in the scam, but only Zahid Ali was suspended. The scheme became more infamous later when farmers from 6 villages filed petition against Kamal Vihar project in HC and then SC, which is proposed on 1600 acres of land, wherein 6 villages may have to be displace after land acquisition. This scam unraveled the connections of TCPD and Environment and Housing department with the land market. Heads of CSOs and other respondents have accused TCPS's JD of similar intentions in KRDP. They have strongly opposed the housing and commercial complex component in KRDP on the lines that the housing capacities in Raipur and Kamal Vihar itself are not being sold out. Moreover, there is housing capacity in the newly developed capital of Naya Raipur, 20 Kms away from Raipur. Also Naya Raipur is said to have housing capacities for 6 lakh tenants. JD of TCPD envisions extension of KRDP upstream of Naya Raipur as the new city will also expand later. Another failed real estate project by RDA and state has been Swagat Vihar near Kharun in Bhathagaon.

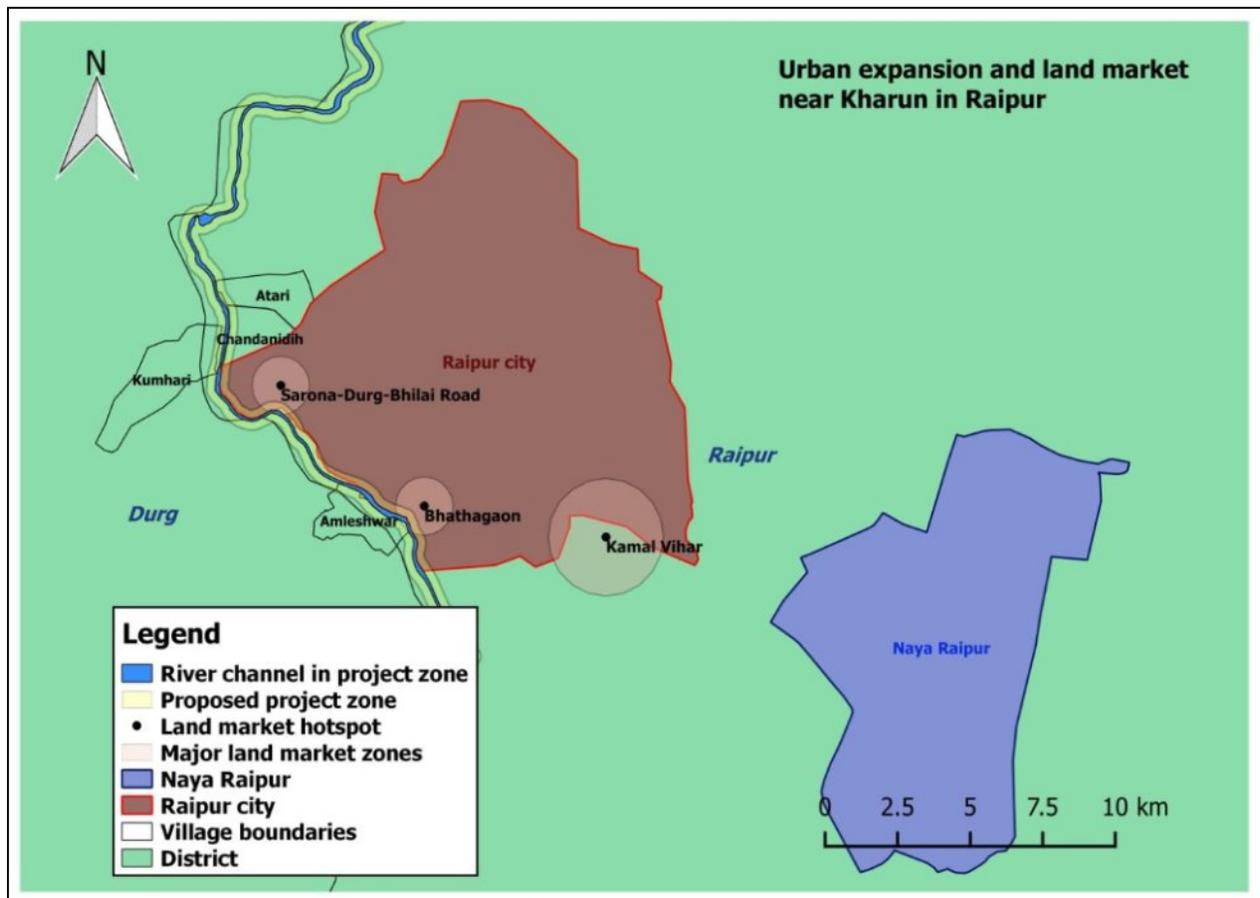


Figure 22: Map showing land market situation in Raipur in light of KRDP and urban expansion

In the light of failure of these projects, CSOs accuse that TCPD wants yet another project to churn out money at the whims of government in form of KRDP. To substantiate the claim of churning out money, as a participant observer waiting for my appointment at Environment Minister's and PHED minister's offices for long hours, I was able to interact more with the ministers' personal secretaries and civil contractors who were also present there for their 'deals'. They were openly talking about the 20% commission required to win themselves a tender on a small check dam project. Another substantiation of this nexus of initiating projects was confirmed when a prominent builder from Raipur anonymously conceded the connections between TCPD and builders and a renowned consultancy firm with regards to Kharun, over one of the telephonic interviews. The consultancy firm 'LEA associates of South Asia' is working on Arpa Riverfront Development Project (ARDP) and also advisor to RDA on KRDP. It also has strong connections with Sabarmati Riverfront Development Project and ITPI. In case of ARDP Mr. Zahid Ali appreciated TCPD's and own work and, was of the view that it is an example set for KRDP. But in fact ARDP is more of a commercial development project with land acquisition from farmers. So, it is indeed a hawk's eye on riparian land.

## 7.2 Assimilation and non-recognition of aesthetic and recreational use: Entertaining a privileged access?

### 7.2.1 Recreational water use and probable successful regime strategies

The school of political ecology has viewed the problem of emergence of recreational use of water and waterfronts, which is creating rivalry between the challenger and incumbent. According to Paulson, Gezon and Watts (2003), political ecology is about struggles over resource access and control (Cole 2012, 1226). A political ecologist, Stroma Cole has contributed to the political ecology school with her paper on water equity and tourism which is based on a case in Bali. According to her, in many tourist places water availability is chasing the crisis point, which is why recognition of recreational use as a separate use in state's water policy is important so as to fairly look at challenger-incumbent relation in changing water access regimes. From Indian context it can be understood that lack of recognition to recreational use or aesthetic use has created a pressure on the existing categories of uses like domestic use, industrial use, etc. The category of recreational use remains an unrecognized category thus paving an undisputed way for it in riverfront development projects and, land-use remains at the

centre of the debate even in water access regimes and development plans. This fugitive nature of the category of recreational use makes it easier to cloak the contestations which a challenger-state brings in riverfront development projects. It adds on to the grey area of formal water access regime which was discussed earlier.

Cole argues that a distinction has to be made between consumptive and non-consumptive uses, because water consumption differs substantially when prominent tourist land-use pattern is dependent on it (Cole 2012). Riverfront development would increase both the uses by adding of recreational and aesthetic value to Kharun's water in for of non-consumptive use as well as increased consumptive use with increased requirement for housing, tourism and commercial complexes. Moreover, sufficient water levels are required in sustaining tourism and recreational industry. Recognition of recreational and aesthetic use is crucial in KRDP's case as it is the new type of use which the challenger-state is trying to accommodate in the existing water access regime, thereby seeking to succeed in establishing a new regime with a new category of use. This new category is the root cause of rivalry and conflict, even before land-use change is considered, because this will gradually and subtly changed the regime through the process of gentrification, in the light of failure of state's AOPR strategy. The PPA strategy adopted by challenger-state through Master Plan is trying to cloak the riverfront development for recreation and commerce, and there are high chances of its success through gradual gentrification because of lack of recognition of recreational use of Kharun's waters overtly. Coming back to concept of Satu and Sairinen's degree of "water dependency", which is a three-fold categorisation, namely, water dependent uses, water related uses and water independent uses (Satu and Sairinen 2005). In KRDP's case water dependent uses are more than water independent and water related uses, where recreation can be termed as water related use, which is not directly dependent on water. This problem leads us to the question whether a regime change in accessing water through such a subtle strategy by challenger-state would conform to hydroinclusion.

### 7.2.2 Reinforcing the risks of hydroexclusion?

After identifying the specific additional change in the water access regime, in form of recreational use, let us understand that how such a 'new comer' use will and state's KRDP policy will respond to the risks of exclusion and marginalization in terms of water access. If we draw a simple spectrum of essentialness of water access with regards to uses, drinking water , domestic



manifested, in future and, still remains so even today. Also the JD of TCPD, Mr. Zahid Ali stated in telephonic interview that the project will surely increase Kharun dependent activities due to recreational facilities. He also added that they want development more of such big recreational areas, like the one near Kharun. So be it the area near Amleshwar or other area upstream of downstream of it, and on both the fronts of the river. He feels that such development should come on both the banks of Kharun so that they can provide people with more recreational avenues. Even the RDA's Chief Engineer, Mr. Bhatia had admitted that the project is meant only for recreational use. This vision is far from the ITPI's vision of riverfront where they aspire to make riverfronts a harmony of rural and urban land use patterns, because of disguised interests of challenger states' which it wants to effectuate in form of successful changes in an urban and elite centric water access regime for recreational use. Such a challenge to the incumbent is indicative of entertaining of privileged access for the urban elite, which it seeks to activate through PPA strategy

## **8. Conclusion: Probabilities of hydroexclusion and latent conflict**

In case of KRDP, considering the aforementioned aspects of spatiality, riverine land and livelihood dependency, land market, key actors' interests, urban sprawl and the nature of water access regimes, it has been understood that the water access regime challenge which challenger-state of Chhattisgarh proposes through riverfront development has not been successful in its first strategy. The state's challenge to change the water access regime in this case emerges largely from two processes, which are urbanization and influence of land market. At the same time it is overlooking the aspirations and needs of the rural people settled immediately next to the city. It is acceptable that the city's growing needs put a renewed pressure on civic amenities, and also on water resources. But here is yet another city-centric approach to riverfront which already sees river as a source of its drinking water in the upstream and sink in the downstream to release sewage.

If the challenger-state was concerned about Kharun's health, as it ostensibly portrays, then setting up of sewage treatment plants and cleaning of river would have been the primary focus. In the light of riverfront development projects as a discourse with broader commercial and recreational goals as per the Indian literature as well as in case of KRDP, the challenge to change

access regime is revolving around urban needs and subsequent influence of land market. The new proposal or challenge of recreational and aesthetic uses, which are not recognized by the formal water access regime, are being presently attempted to accommodate through the strategy of activation of public policies through Raipur's master plan. In all this water resources and Kharun river in itself has remained at sidelines. Appropriation of riverfront or riverine land has been the main goal and, exclusively for riverfront project for which river and its water mainly has aesthetic and recreational value. However, at the same time such a use of water is being tried to cloak under the guise of river conservation and increasing water dependency.

Facilitation of commercial, real estate and recreational development by impounding water is indicative of change in water access regime in favour of the urban needs. Presently Raipur Municipal Corporation and villagers are the incumbents, wherein most of the interventions which consolidate the present regime is mostly urban centric, like anicut policy for drinking water supply, pitching of river for flood control. Challenger-state's first strategy of activation of property rights by means of land acquisition has not been successful and, now it seeks to modify the regime successfully through activation of public policies through Raipur's Master plan, but only on government land, which is also a common land in fact. Subsequently, it can be speculated that suburban gentrification will accelerate the process of regime change by changing the incumbent's composition as the city will expand with change in land-use near river, once KRDP is only done on government land. This is so because urban sprawl will not only remain inevitable, but it will accelerate once riverfront development interventions take place, thereby triggering gentrification. Even though the expression of conflict has faded, it thus remains latent.

Ostensibly, the top-level-ITPI's vision seek to do riverfront development by maintaining the harmony of land-use pattern, nothing of that sort has been noticed in the KRDP's policy and proposed plan and interventions. In these dynamics the challenger-state has taken a step backward not considering the third strategy, which is regarding vitality of the resource, because it is more rural centric strategy and would not be beneficial in negotiating commercial development and recreational use of Kharun's waters. It has been used by the incumbents, especially from the rural part of Kharun's riverine lands, to stop the regime change. TCPD's approaches while ensuring financial viability through commercial development and housing, which in turn will create jobs and bring about sustainability of livelihoods and inclusion of all

through creating jobs, conform to the concept of inclusive growth and not inclusive development.

Hence, on the basis of the present developments in the case it can be said that KRDP policy of state does not conform to hydroinclusion, because it does not address the problem of risks of marginalization and exclusion while changing the water access regime. Since water access regime has political connotations, and inclusive development sees development as process that includes marginalized people, sectors and countries in social, political and economic processes for increased human well-being, social and environmental sustainability, and empowerment. Hydroinclusion framework in this case however looks at only the inclusion of 'marginalized' in political sense of negotiating a change in water access regime. Although challenger-state's latest strategy of APP, as discussed earlier, may look like a response to the risk of exclusion and marginalization, which also seems fitting to the definition of hydroinclusion. But the empirical evidence from the key actors, like ministers, town planners, government officials, etc., who compose challenger-state itself indicate that the main goal of this project is recreational and commercial development, which will subsequently bring opportunities from water dependent commercial activities in the new regime, thus ensuring river is protected and less contaminated.

Speculative analysis has its own limitations, because speculations in form of probable circumstances are uncertain. However, in case of Kharun the urban centric transformations of the rural area and gradual expansion of Raipur towards Durg district's rural areas, have already indicated the signs of exclusion and marginalization, wherein the urban centric requirements in terms of water access are furthered over the rural ones. So, with hydroinclusion framework the phenomena of hydroinclusion is noticeable in KRDP's case, but presently KRDP does not conform to it in the political process of water access regime change. Further, it leaves us with the question whether the process of development in any sector where water is a part, inherently excludes water in that process, or water is a guise to further other interests? On similar lines, another question is whether uses like recreational and aesthetic use of water can be captured in quantities so as to know the costs of hydroexclusion? Anyways phenomena like hydroinclusion cannot be generalized until and unless it is validated in other cases and scales.

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## Appendices

<b>Question schedule</b>
<b>People in PPA</b>
<ul style="list-style-type: none"><li>• What are your sources of livelihood?</li></ul>
<ul style="list-style-type: none"><li>• What is / was the traditional occupation of your family / community? (Historical background of community)</li></ul>
<ul style="list-style-type: none"><li>• Status of livelihood (Reliability and income)?</li></ul>
<ul style="list-style-type: none"><li>• Family members and their livelihood sources?</li></ul>

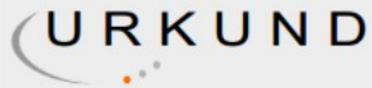
<ul style="list-style-type: none"> <li>• How are you / is your family dependent on Kharun, and how do you use its water?</li> </ul>
<ul style="list-style-type: none"> <li>• How do you access river water for different purposes?</li> </ul>
<ul style="list-style-type: none"> <li>• What are the physical and social problems faced while accessing river water?</li> </ul>
<ul style="list-style-type: none"> <li>• What are the different official and unofficial permissions needed to access water from Kharun and other sources, for different uses?</li> </ul>
<ul style="list-style-type: none"> <li>• How KRDP or riverfront development per se will affect your livelihood?</li> </ul>
<ul style="list-style-type: none"> <li>• What are your views about upstream users and farmers, since they have perennial access to river water? (located near Mahadev Ghat)</li> </ul>
<ul style="list-style-type: none"> <li>• What do you expect from upcoming riverfront development project(s) on Kharun?</li> </ul>
<ul style="list-style-type: none"> <li>• How KRDP or riverfront development per se will affect your access to Kharun's water, and other sources of water?</li> </ul>
<ul style="list-style-type: none"> <li>• What are views about opportunities and losses from such development?</li> </ul>
<ul style="list-style-type: none"> <li>• What are your views about land market, land prices and acquisition in light of Kharun and its development?</li> </ul>
<ul style="list-style-type: none"> <li>• Who are involved in land dealings near Kharun?</li> </ul>
<ul style="list-style-type: none"> <li>• Do you support protests against such project, which happened near Mahadev Ghat?</li> </ul>
<p><b>Bureaucrats, CSO officials and journalists</b></p>
<ul style="list-style-type: none"> <li>• What is riverfront development according to you, in the light of Kharun?</li> </ul>
<ul style="list-style-type: none"> <li>• What are the current categories of use of water from Kharun as per policies, rules, regulations, proposals, executive orders, etc.?</li> </ul>
<ul style="list-style-type: none"> <li>• What is the quantity of water diverted from Gangrel dam to Kharun, and what are the uses of diverted water?</li> </ul>
<ul style="list-style-type: none"> <li>• What are the formal provisions for irrigation and other uses apart from drinking water?</li> </ul>
<ul style="list-style-type: none"> <li>• What are the informal ways of water usage, if any, from Kharun river?</li> </ul>
<ul style="list-style-type: none"> <li>• What are your views about fishing, domestic uses, industrial uses, etc., contestations due to transformation in requirement of water in accordance to expansion of Raipur city?</li> </ul>

<ul style="list-style-type: none"> <li>• How will KRDP, or riverfront development per se will change the CoUs and access to Kharun?</li> </ul>
<ul style="list-style-type: none"> <li>• What are the provisions for fishing leases or fishing cooperatives for fishing in Kharun?</li> </ul>
<ul style="list-style-type: none"> <li>• What are the provisions for dredging (for brick kiln) leases?</li> </ul>
<ul style="list-style-type: none"> <li>• How the above two will be affected in light of riverfront development?</li> </ul>
<ul style="list-style-type: none"> <li>• Which new opportunities and losses will riverfront development and urban expansion bring about?</li> </ul>
<ul style="list-style-type: none"> <li>• Why KRDP is not feasible (according) to WAPCOS report?</li> </ul>
<ul style="list-style-type: none"> <li>• What was the decision making process for KRDP?</li> </ul>
<ul style="list-style-type: none"> <li>• What is the decision making process for current riverfront development projects on Kharun?</li> </ul>
<ul style="list-style-type: none"> <li>• How do different department co-ordinate for such an inter-departmental project?</li> </ul>
<p><b>Land market-related (People, agents, dealers, journalists, etc)</b></p>
<ul style="list-style-type: none"> <li>• What are the land rates of land near Kharun river (both N.A and A in 300 m on either side and beyond)?</li> </ul>
<ul style="list-style-type: none"> <li>• How many transactions take place in both categories of land?</li> </ul>
<ul style="list-style-type: none"> <li>• Who are the popular builders and land dealers in those areas?</li> </ul>
<ul style="list-style-type: none"> <li>• Do local leaders support housing projects and land transactions near Kharun, and why?</li> </ul>
<ul style="list-style-type: none"> <li>• How are leaders involved in land market near Kharun?</li> </ul>
<ul style="list-style-type: none"> <li>• What role do politicians play in land market of Kharun considering area around Kharun is seen as expansion avenue for Raipur?</li> </ul>
<ul style="list-style-type: none"> <li>• What are your views about changes in land prices and overall implication on land market due to riverfront development projects on Kharun?</li> </ul>
<p><b>Environment Minister</b></p>
<ul style="list-style-type: none"> <li>• Why is the KRDP being planned?</li> </ul>
<ul style="list-style-type: none"> <li>• What is the importance of KRDP for Raipur and the government?</li> </ul>
<ul style="list-style-type: none"> <li>• Why does the government want to proceed with this project?</li> </ul>
<ul style="list-style-type: none"> <li>• What are your views on the conflict over KRDP?</li> </ul>
<ul style="list-style-type: none"> <li>• What are the plans for prospective affected parties who will be resettled if acquisition is done?</li> </ul>

<ul style="list-style-type: none"> <li>• What all components from Sabarmati river front's model will be adopted in KRDP?</li> </ul>
<ul style="list-style-type: none"> <li>• What is the current status of the project?</li> </ul>
<ul style="list-style-type: none"> <li>• What are the alternatives considering project's plan exclusively on government land?</li> </ul>
<ul style="list-style-type: none"> <li>• Why are the components of tourism, housing and hotels required in KRDP?</li> </ul>
<ul style="list-style-type: none"> <li>• Why has the conflict escalated and what are the interests of aggrieved parties?</li> </ul>
<p><b>PHED Minister</b></p>
<ul style="list-style-type: none"> <li>• Who initiated /proposed the idea of KRDP or riverfront development per se on Kharun?</li> </ul>
<ul style="list-style-type: none"> <li>• What are policies and legal provisions for such projects?</li> </ul>
<ul style="list-style-type: none"> <li>• How such a 'development project' will be coordinated considering its inter-departmental nature?</li> </ul>
<ul style="list-style-type: none"> <li>• What are the benefits and losses that you foresee because of such projects?</li> </ul>
<ul style="list-style-type: none"> <li>• What is its importance for Raipur?</li> </ul>
<ul style="list-style-type: none"> <li>• What are your views on its opposition?</li> </ul>
<ul style="list-style-type: none"> <li>• How will it affect water access (rights regime and livelihood) and land market around Kharun?</li> </ul>
<ul style="list-style-type: none"> <li>• What is the role of Water Resources Utilization Committee in such a project?</li> </ul>
<ul style="list-style-type: none"> <li>• What role do you play in that committee?</li> </ul>
<ul style="list-style-type: none"> <li>• What are your views on inclusive development and riverfront?</li> </ul>
<ul style="list-style-type: none"> <li>• What are your views on prioritizing certain transformations (land use pattern, water access and livelihoods) over others in the light of river front development?</li> </ul>
<p><b>FGD points</b></p>
<ul style="list-style-type: none"> <li>• General awareness about KRDP</li> </ul>
<ul style="list-style-type: none"> <li>• Dependency on Kharun</li> </ul>
<ul style="list-style-type: none"> <li>• Importance of Kharun in lives and inhabiting / owning land near it.</li> </ul>
<ul style="list-style-type: none"> <li>• Views on opportunities and losses from such projects</li> </ul>
<ul style="list-style-type: none"> <li>• Views on adaption and adjustments due to changes in land economy and urbanization because of such projects</li> </ul>
<ul style="list-style-type: none"> <li>• Views on land market and changes due to such changes</li> </ul>
<ul style="list-style-type: none"> <li>• Other anticipated changes from Kharun</li> </ul>
<ul style="list-style-type: none"> <li>• Demands and expectations from authorities.</li> </ul>
<p><b>TCP officials and members</b></p>
<ul style="list-style-type: none"> <li>• How would you define riverfront development per se?</li> </ul>

<ul style="list-style-type: none"> <li>• Why riverfront development is necessary in town planning?</li> </ul>
<ul style="list-style-type: none"> <li>• How is it sustainable?</li> </ul>
<ul style="list-style-type: none"> <li>• What are the details about KRDP, how do you envision it? (technically)</li> </ul>
<ul style="list-style-type: none"> <li>• Why KRDP is important in TCP?</li> </ul>
<ul style="list-style-type: none"> <li>• What are further plans in the wake of non-feasibility and opposition to it?</li> </ul>
<ul style="list-style-type: none"> <li>• How will it ensure sustainability when your school of thought believes in ‘anicut policy’ to ensure ‘zero run off’ which will in fact disturb the natural riverine ecology? (making river storage tanks; river remains no more a river)</li> </ul>
<ul style="list-style-type: none"> <li>• How KRDP will include the indigenous communities and marginal sections and their livelihoods in planning process? (because taming river is also “hazardous” urban development)</li> </ul>
<ul style="list-style-type: none"> <li>• Similarly, in 2015 Chhattisgarh chapter’s opening note by Prof. D. S Meshram, he envisions such a waterfront development as the one which provides opportunities for public use, and encourages water dependent activities. He further said that such development should be done in context of surrounding land uses. It sounds highly contradictory, especially when you bring housing component into it and changing the course of river with such a greater intervention which reduces water dependency and access to communities. What are your views? (entertains privileged access).</li> </ul>
<ul style="list-style-type: none"> <li>• ITPI president said in the light of Kharun, that presently, land uses along waterfronts in cities are more determined by market demand than on the requirement of community. But Raipur’s recent history of land market hint that the market demand is influenced by few, the how this project public use in context of current land-use which is a mix of urban and rural context, thereby including people from both these contexts?</li> </ul>

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**Significance:** 1 %

#### Sources included in the report:

<https://architexturez.net/doc/az-cf-166149>  
<https://sandrp.wordpress.com/2014/11/03/goda-park-riverfront-development-project-violation->  
<https://sandrp.wordpress.com/2014/09/17/riverfront-development-in-india-cosmetic-make-up->

#### Instances where selected sources appear:

8