

ADAPTING PASTURE LAND MANAGEMENT SYSTEM OF CHOTANAGPUR TRIBES

PREFACE

The main purpose of this paper is to evaluate alternative institutional arrangements to redeem the health of Bero's pasture land management and use them to augment the resource base of the poor. Historically, poor people were heavily dependent on these (common) resources. Recent experiences in privatizing these resources and entrusting ownership/usufruct rights to individual poor families does not appear to have produced encouraging results either in restoring productivity of this land or in expanding the resource base of poor families. Establishing the instrumentality between individual reward and quality of effort, and explicit efforts in group action to establish clearly each member's stake, rights and responsibilities in the resource is the way towards gaining sustainability.

This research paper takes into account the case of five Chotanagpur villages, namely Asro, Lamakana, Dumardon, Hutri and Dhauntatoli in the Jharkhand state of India and analyzes the following prominent features of pastureland management system in these villages. The villages are Oraon dominated villages. The Oraons are believed to belong to the Dravidian stock. They generally speak Kurukh language. The Oraons mainly depend on agriculture and have believed to have first introduced plough cultivation in the Chotanagpur Plateau.

It has been observed that apart from minor diversification of occupations there has been rapid dispossession of land, forcing increasing number of them to become a laborer. In spite of protective land laws, a number of them have been rendered landless due to regular and irregular processes of land alienation. Money lending law has not been enforced and moneylenders continue to charge exorbitant rates of interest and fully exploit the tribal people.

This research paper primarily focuses on the pastureland management system of basically this primitive tribe and how it is being adjusted with the changing times.

Further it invites the students from different fields and practitioners to share their level of experiences and give us the fruitful and constructive suggestions.

ACKNOWLEDGEMENT

“It is well to give when asked, but it is better to give unasked, through understanding; and to the open handed the search for one who shall receive is joy greater than giving”.

I am grateful to Dr. Himadri Sinha, Xavier Institute of Social Services, for providing us the necessary guidelines to complete this research work and present it in the International Association for the Study of Common Property Conference in Bali, Indonesia.

I sincerely thank all the villagers of the five villages who have helped us immensely in our research work. We convey our heart felt gratitude to the villagers for listening patiently to our queries and providing us with the necessary information to help us complete our research.

Nabhojit Dey

Raka Dutta

Brief Area Profile of the region and the five villages where the research was conducted:

The districts of Ranchi in the south of Chotanagpur division enjoy the distinction of having the highest percentage of tribe in the state of Jharkhand. The main tribes present are the Oraons, Mundas, Kharias, Kharwar, Asurs and Birhor. Overall literacy is 37% while for males it is 51.5 % (census, GOI, 2001).

The district falls in Chotanagpur plateau. Average altitude of the district is around 300 meter. During last one decade average annual rainfall of the district is around 120c.m. The rainfall is erratic and well distributed. 95% of the rainfall occurs during June to October. Maximum duration of effective rainfall days per year is estimated to be 100 days. District has two main river viz. South Koel on the north east side and Sankh on south west side.

Soil of the district is primarily red soil originated from Granite and Gneiss rocks and moderate to highly acidic. In some parts of the district, laterite soil is also found; farmers carved out paddy field in lower valley with traditional contour in terracing methods. Uplands are used for Mandua (Ragi), upland paddy, maize, black gram, pigeon pea, Niger (Sarguja) and seasonal vegetables.

District is bestowed with nearly 139.2 thousand hectares of forest land. Majority of tribal population of the district still largely depend on non-timber product as their off season source of income. Good number of travel household also goes for seasonal migration in search of unskilled wage employment in other states.

Only 2.45% land has irrigation facility. Out of this, in 87.2% cases irrigation is provided from well. Only 3.4% irrigated land is irrigated from ponds. However the district has immense irrigation potential. This can be harnessed through the creation of percolation tanks, water harvesting tanks, making check dams in small streams and well.

The target villages viz Asro, Lamkana, Dumardon, Hutri and Dhauntatola under the Bero block are situated at a distance of 50 km from the capital of Jharkhand, Ranchi. This region falls under the tropical monsoon climatic zone.

The average annual rainfall of this area though ample but not sufficient to sustain the agriculture throughout the year. The reason being, rainfall is not evenly distributed throughout the year rather concentrated to 3-4 months. Hence in the absence of rainwater harvesting system possibility of undertaking second crop is distant dream for most of the farmers.

The five villages where the research was undertaken have a total land area of 867.78 hectares. The total land area under forest is 41.8. The total non irrigated land area is 675.22 hectares. The land area cultivated through wells is 51.71 hectares. The potential which remains unused is 48.88 hectares. The total wasteland is 50.18. The total population of the five villages is 1951 out of which 1457 is the tribal population. The total number of households is 334.

Table 1: Shows the Distribution of Rainfall over a Year

Months	Jan	Feb	March	April	May	June	July	August	Sep	Oct	Nov	Dec
Rainfalls (in %)	-	-	-	-	-	8.5	24.5	33	17	8.5	8.5	

As it is tropical monsoon climatic region quite near to the tropic of cancer, the summer season is long and hot whereas winters are mild. The temperature is favorable both for *Kharif* and *Rabi*. The humidity is relatively high from July to September as most of the rainfall occurs during this period which favors *Gora Dhan* on the *Tanr* land. Apart from this period most of the year is dry except for couple of months in the winter season.

Most of the land is highly undulated in Jharkhand not untouched from it. This area is not fully utilized for agriculture. And for large scale agricultural production land should be optimally utilized.

Classification of land: land in this area is classified into 2 categories i.e. Tarn and Doin.

Tarn: Tanr land is the upland region of the area where level of ground water is low.

Doin: Doin land is the lowland, where level of ground water is not as low as compared to tanr land. Further these two categories are divided into 3 sub categories which are as follows:-

Tanr: Tarn I, Tarn II, Tarn III

Doin: Doin I, Doin II, Doin III

Table 2:Types of Land Its Ground Water Level and Types of Soil

Types of land	Ground water level (in feet)	Types of soil
Doin ○ Doin I ○ Doin II ○ Doin III	0-5 5-8 8-10	Loamy Sandy loam Sandy loam
Tanr ○ Tarn I ○ Tarn II ○ Tarn III	10-12 12-20 20-25	Sandy Sandy gravel Stony

From the above table we analyze that the ground water level of tanr land is too low to utilize. The soil too is stony and gravelly which hinders with the utilization of these lands for agricultural purposes. The soil of this area is slightly acidic in nature. Mainly consists of loamy, sandy loam, sandy, sandy gravel and stony. The soil of this area supports cultivation of paddy, potato, marua, ginger, etc. From the table no. we can infer that Doin land has loamy and sandy loam soil and high water level which is ideal for paddy cultivation. Tanr land which has gravelly and stony soil becomes ready after proper treatment of the soil for potato cultivation.

Crops: Crop is the ultimate goal of the farmer. Crops include food crops which are necessary for the farmers to survive. Apart from these crops, farmers also produce cash crops that earn them money to buy other essential commodities which are not produced by them rather available in the market.

Although the block being vegetable growing belt yet this area in contrast is not very much into large vegetable production. Hence it has not been developed as the major economic activity of the farmers of this area.

Types of crops: Crops of the area can be categorized into five types which includes the crops grown on large scale i.e. major crops and the crops grown on small scale i.e. minor crops

Table: Types of Crops Cultivated In the 5 Villages

TYPES OF CROPS	MAJOR CROPS	MINOR CROPS
CEREALS	Paddy(Doin), Marua	Wheat, Gora Paddy
VEGETABLES	Potato(Ultimatum)	Pea, Tomato, Brinjal, Cabbage, Cauliflower, Onion, Ladyfinger, Cucumber, Potato(Dessi)
OIL SEEDS	Mustard	Jatangi And Groundnut
PULSESES	Ured And Arhar	Kurthi
SPICES	Ginger	Turmeric

From the table we can see that paddy is grown on large scale but mainly for consumption purposes. Though potato is grown as major crop yet its production is not enough to make them economically sustainable throughout the year. The other categories of crops are also produced mainly for consumption purposes. Thus we can say that land here is skill under utilized for agriculture and agricultural production mainly for household consumption.

LAND UTILIZATION FOR CROPS

Table no 3. LAND UTILIZATION ROUND THE YEAR FOR DIFFERENT CROPS

Months		Jan	Feb	March	April	May	June	July	August	Sep	Oct	Nov	Dec
D O I N	1.Paddy						√	√	√	√	√	√	
	2.Tomato		√	√	√	√							
	3. Brinjal		√	√	√	√							
	4.Potato(Seed)	√	√	√									
	5.Cucumber		√	√	√	√							
	6.Ladysfinger		√	√	√	√							
	1.Wheat	√	√									√	√
	2.Gora						√	√	√	√			
	3.Marua						√	√	√	√	√		
	4.Urad						√	√	√	√	√		

T A N R 7.	5.Arhar						√	√	√	√	√		
	6.Sarguja						√	√	√	√			
	7.Potato						√	√	√	√	√		
	8.Tomato						√	√	√	√	√		
	9.Raddish							√	√				
	10.Beans							√	√	√			
	11.Ginger							√	√	√	√		
	12.Pea										√	√	√
	13.Maize						√	√	√	√			
	14.Groundnut						√	√	√	√	√		

From the above table we can analyze that more than half a year *Tanr* land is left unutilized due to unavailability of irrigation facilities. This depicts that this region is heavily dependent on rainfall. Although from the table we see *Doin* land is occupied throughout the year but basically underutilized during the months of December to May. Only some of the *Doin* land is utilized for vegetable cultivation mainly for consumption.

Cropping pattern: The general cropping pattern of this area is mono-cropping. The farmers take one crop at a time either for consumption or for selling. This is mainly due to over dependence on rainfall. This is mainly due to dependence on rainfall. Although on few occasions they take two crops at a time on the same land, i.e. mixed cropping. Second crop is still distant dream for most of the farmers of the area in the absence of irrigation facilities.

Agriculture directly bearing on livestock management. Agriculture provides fodder in the form of its by-products. Agriculture, forestry and livestock have a complimentary effect on each other. The major problem of the Indian agriculture system is the lack of irrigation facilities in the country. The Indian farmers are highly dependent on the rainfall, which is why, livestock is not taken as a primary source of livelihood due to fodder scarcity, because of the lack of irrigation facilities fodder could not be made available through the year which hinders livestock management or tacking up of livestock rearing as a mainstay of livelihood. Livestock is used for multiple purposes. It is used not only for consumption purpose but also for commercial and agricultural purpose. For consumption purpose livestock is used for getting milk, egg, and meat, for commercial purpose they are used as draft animal. To increase the livestock production or poultry dairy farming the emphasis should be given on improving irrigation facilities which is the major bottle neck that hinders to take up livestock rearing on commercial scale.

The specific objective of the study is to highlight the prevailing condition in the five villages viz Asro, Lamkana, Dumardon, Hutri, Asro and Dhauntatola. This would help us to analyze the problem regarding the pasture management of the tribes in these villages.

The people of these villages keep the livestock as per their capacity. Those farmers who are financially strong keep the breeds like jersey. Most of the cattle are of indigenous breeds. Livestock is generally found in all the five villages. The types of livestock which are generally found in these five villages are for milch and draught. Animals like goats and hens are used for their own consumption and also as their assets. Draught animals are of more use because they

are used for ploughing the land. The types of livestock which are mostly found in these four villages are cattle, goat, buffaloes, hen and bull.

Table 4: Livestock holding of the villagers

Villages	Number of Families					
	Grade A	Grade B	Grade C	Grade D	Grade E	Total
Lamkana	2	50	20	12	20	104
Hutri	5	10	18	24	11	68
Dumardong	-	26	14	11	3	54
Daunta Toli	21	12	8	3	14	58
Asro	-	3	56	30	19	108
Total	28	101	116	80	67	392

- Grade A – Family having four different type of livestock
- Grade B – Family having three different type of livestock
- Grade C – Family having two different type of livestock
- Grade D – Family having one type of livestock
- Grade E – Family having no live stock

From the above table we can see that a few of the families from the following villages have all the four types of livestock, and most of the families have only two different type of livestock. From this we can say that the family keep the livestock as per there capabilities and mostly the animal product is used for self consumption and not for selling.

Fodder Availability: Fodder is the feed which is given to the animals and there feed contain all the types of essential nutrient which are necessary for the proper maintenance of the animal. In the five villages (Lamkana, Hutri, Asro, Dumardon and Dhauntatola) we have studied and found that the fodder is not exclusively grown for the animal. The fodder are generally the grasses in the grazing land, wild grasses which grows on the bunds of the field, these grasses are cut and given as fodder to the animals, which is preserved and stored and are given to the animals when there is very little availability of fodder, from February to June.

Table 5. Seasonality of fodder

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
	√	√	√	√	√						

Availability of fodder according to season: As far as the availability of fodder is concerned it is not available all the year. The fodder is found in ample after the rainy season, July. It is found in a large amount in the month of September and very little amount of fodder is found from the month of February to June. The hay which is preserved and kept as fodder for the animals is given to the animals during this month.

In this context the villagers in order to increase their income come into a contract for an arrangement with the farmers. During the winter season when it is time to grow vegetables then the farmers under the arrangement give their land for the purpose of both vegetable growing as

well as grazing of the cattle. This is done by an agreement that the person who gives his land for the purpose of grazing for the other farmers would receive a certain share of the profit from the sale of the vegetables. In the next winter the people who had grown vegetables in their fields would let their land be used as a grazing field and the other farmers would grow vegetables in their fields and divide the profit. This has not only provided livestock rearing a profitable and manageable proposition but also has raised the income of the farmers.

The research takes into account the way in which this arrangement has been sustainable all these years, the way in which the process of negotiation takes place, the institutional mechanism works, the economic viability of the mechanism, and the effect of the system on the eco system and the advantages and the disadvantages of the system.

Methodology: The research has been done by going through Participatory Rural Appraisal as a means to extract information from the villagers. The PRA tools which were used are social mapping, resource mapping, trend analysis, time line, focused group discussions and semi-structured interviews. A market shed study was also done in the Bero and Bharno market sheds to know the trend of sales volume for the month of 2003, 2004, and 2005.

The analysis of the paper completely rests on the following parameters.

1. The process of negotiation under this system

Among the Chotanagpur tribes the Oraon tribe holds the most important position. So it is the oraon tribe who have to take initiative in the whole system .And this is only possible by bringing other tribes on the same platform and discussing the problem collectively. Because this is a matter which cannot be handled single handedly but with equity which in turn will result in optimum utilization of land for maintaining their normal life.

2. The institutional mechanism of this system

Setting up and institutional governance is a key element for sustainable community-based pastureland management. When multiple individual users become dependent on a particular common property resource like pastureland they are jointly affected by almost everything they do. This lays down the ground rules for collective action that each individual must take into account the choices of others while assessing his or her personal choices. In other words if each user acts independently the total benefits they obtain would be less than those which could have been achieved through some coordinated strategies. It has been pointed out that this uncoordinated act at a minimum will cause serious imbalances in benefit appropriation at user level and at worst it will result in the destruction and depletion of common property resources. Pasture management system can be achieved through organizational efforts by changing the situation from one in which individual users act independently to one in which they adopt coordinated strategies for obtaining higher joint benefits.

To ensure the coordinated strategies the pasture management system set various rules and regulations. Individuals are likely to cooperate with a group activity if governing rules ensure

equity in access right and benefit sharing process; safeguard participation of all sections in decision making process; ensure appropriate monitoring and graduated sanctions; do not contradict traditional and existing system and community governance; and provide scope for modification /amendments in the existing rules as a response to change circumstances and demand for sustenance.

Pastureland management system enforces uniform governing rules except the day-to-day operational rules, irrespective of the regional variations.

3.Economic viability of this system both in the short and the long run

A market shed study in the Bero market shed and the Bharno market shed shows the trend in the sales volume for the months of November, December and January. The trend clearly shows that there has been a marked increase in the production and subsequent increase in the sales volume.

Table 6. Total sales volume (in kgs.) for the month of Nov, Dec and Jan (2005-06)

Crop	Total sales volume(kg) in 2005-06		
	Nov.	Dec.	Jan.
Paddy	120	415	240
rice grain	207	8	1097
Wheat	95	150	120
Mandua	120	820	940
maize	320	1150	850
other millets	40	15	0
potato	60	165	85
tomato	408	170	112.5
cowpea	108	455	255
sweet gourd	12	15	5
bottle gouird	240	470	132.5
brinjle	35	480	505
bitter gourd	150	270	307.5
lady finger	85	190	250
cauli flower	20	45	0
cabbage	21	180	160
radish	0	165	14.5
chian sag	0	415	272
kundri	66	85	90
coriander leaf	2	1705	8
ground nut	450	650	300
lime	36	85	40.5
garlic	1600	700	522.5
ginger	100	450	225
black gram	91	270	270
chilly	0	130	147.5

mahua	0	300	215
lac	5.5	140	47.5
onion	0	115	131
beans	85	45	90
nursery	0	15	0
arvi(pechki)	0	70	110
TOTAL	4476.5	10338	7543

Table 7. Mean retail price for the month of November, December and January (2005-06)

crops	Mean retail price for the year 2005-2006		
	Nov.	Dec.	Jan.
paddy	2.5	3.5	3.5
rice grain	8.5		9
wheat	4.5	5.5	4.5
mandua	4	8.5	8
maize	7	3	2.5
other millets	7.5	7.5	0
potato	2.5	4.5	5.5
tomato	2.5	6.5	5
cowpea	9	7.5	6.5
sweet gourd	15	9	10
bottle gourd	21	9	11
brinjle	9	8	6.5
bitter gourd	4.5	4.5	3
lady finger	7.5	7.5	6.5
cauli flower	5	5.5	0
cabbage	27.5	2	2
radish	0	19	15.5
chian sag	0	23.5	28.5
kundri	27.5	26.5	27.5
coriander leaf	57	41.5	43
ground nut	23	19	22.5
lime	37.5	21.5	92.5
garlic	13	10.5	11
ginger	117.5	130	191.5
black gram	19.5	10.5	9
chilly	0	14	8.5
mahua	0	2	2
lac	7.5	8	9
onion	0	19.5	21
beans	7.5	9	8
nursery	0	22.5	0
arvi(pechki)	0	9.5	18
TOTAL			

The market shed study was undertaken for the month of November, December and January to see the trend of sales volume and retail price in the winter season as a direct outcome of the – pastureland management system in practice in the five villages. From the tables it is clear that there has been a definite increase in the sales volume as well as the retail price of the agriculture produce. The farmers are not only able to produce more but also the quality of produce has improved as is evident from the high prices their produce is fetching in the market. The following study clearly brings out the fact that the present system of pastureland management has been a very successful practice when we consider a short term period.

In the long run the system the system would remain a successful practice till the time the farmers forget their individual profits and come together for the cause of others. The system is being practiced now for many years and till now the system has survived and would do so in the future till the time the tribal keep on reaping benefits from the present system of pastureland management system working together in unison.

4. The effect of the practices on ecosystem

Ecosystem plays an important role in sustainable development. The real problem arises when this ecosystem starts degrading and loses its own productivity. The earlier view of unlimited economic growth saw some kind of natural law, which is now being replaced with more realistic insight that economic growth is an historical process with specific preconditions and consequences with ecological implications. The sustainability of local ecosystem means that territory must come before function. Sustainability does not imply a static situation, however, and the problem is to strike the right kind of balance both between territory and function and between ecological development and ecological balance.

The existing pasture management system addresses the problem of depleting water resources or the fast reducing water table. Since only a part of the land is utilized for cultivation so the water use decreases and thus the water table does not reach the rock bottom. This maintains the sustainability of the water resources like ponds and wells in the vicinity and provides water for irrigation even in the lean period. It is a proven fact too much use of fertilizers and pesticides not only makes the soil infertile after sometime but also affects adversely the quality of the agriculture produce. Under this system the use of fertilizers and pesticides is minimized and the farmers make use of vermin compost and vermin wash made from the dung of the animals which graze on the field. Thus the dung is readily available in close vicinity. This has improved the quality of crops and the crops are fetching higher prices in the market.

5. Advantage and disadvantage of the system:

Like a coin has two sides so do any system works on the concept of advantages and disadvantages. In other words any system which exists rests on the following advantages and disadvantages of the system. As the system is for the collective benefit of the individuals therefore, conflict is bound to happen as everybody wants to get the maximum out of the system. As a result conflict is bound to happen and therefore conflict resolution been one of the most pervasive and sensitive aspects of institutional governance.

Advantages:

1. Land is being judiciously used by the villagers.
2. Forest farming as practiced by some transmigrates was more extensive and more damaging in the new forest areas than in the homelands.
3. In the home areas vary their mobility and utilize fallow periods long enough for forest regeneration.
4. Migration, forest clearing and land opening by migrants is not haphazard, as some have thought, but well-organized and beneficial
5. Customary wood cutting by small groups in one study area is characterized by appropriate technology which brings economic benefits to rural people and causes less damage than highly mechanized means.

Economic benefits:

The earnings of the villagers increased by the equitable distribution of the land

Social benefits:

1. Community mobilization
2. Formation of an institution which thereby helps in conflict resolution and the villagers get an opportunity to do cropping in the rabi season.

Indian CPRs constitute a significant component of the agricultural resource base in rural areas of developing countries. Broadly speaking, the CPRs are those that are utilized jointly or individually by the members of the community, with or without usage charges, without any exclusive individual property right on them. In the context of village India, CPRs include: village forests, community pastures, "wastelands", community threshing grounds, river/rivulet banks and beds, watershed drainages, ponds, tanks and groundwater; etc. The CPRs directly or indirectly play an important role in enhancing and stabilizing the income, employment and sustenance of village communities. Under the pressure of circumstances, however, CPRs have been declining and deteriorating rapidly during recent decades. Institutional changes, increased pressure on the land and the free play of market forces seem to be primary factors behind the decline of CPRs. This paper, after highlighting the contribution of CPRs to village income, presents evidence on their erosion. Factors contributing to this erosion are discussed with the help of village-level data from selected areas of Rajasthan and Madhya Pradesh states in India. The role of market forces in the process is described.

The further development of pasture land management is favored by the presence of the following certain state institutions: regulations in respect to tenure on common property and/or to cooperative organization, government willingness to assist local groups to formulate and enforce rules of group access to, and non-member exclusion from, common land areas, and policy and implementation structure that provides at least equal attention to a "people-centred" forestry paradigm as to the currently more dominant "forest-centered" one.

Successful pasture management system is conditioned by all of these factors and all of them operate in conjunction, rather than independently. Many of these conditional factors are dynamic, rather than static. To be sustainable, CPR management systems must, therefore, be amenable to regular adaptation to social and institutional change.

Local conditions which are generally conducive to common resource management include a relatively homogeneous population, either small group size with membership based on common

interests and self-selected leaders, and/or relatively strong and generally accepted community institutions for decision making and rule enforcement in the case of larger groups, existing (remnants of) traditional or indigenous common management systems, based on group control rather than on hierarchical control, reasonable equity among group members with respect to access to forest resources and assurance about how individual members will participate in management activities and benefits, and presence of local regulations with respect to reinvestment of part of the benefits from communal forest management in sustainable control mechanisms.

It is only in recent years that common property land resources have attracted the attention of scholars and others. The development of infrastructure facilities, such as roads and transport networks, has opened up markets for some natural resources. While this is a healthy development, it has also resulted in far too rapid growth in the rate of exploitation of the resources. Since independence, the population, including that of rural areas, has grown at a very rapid rate. This has increased pressure on available land. The area under CPR land in villages has decreased and continues to do so because of privatization. Over-use and over-exploitation of land has also led to deterioration in its quality. As a result, the status and area of CPR land has changed considerably.

The problem of land degradation is particularly severe in rural CPRs, which constitute a significant proportion of total land resources in the semi-arid regions where control over CPRs was exercised through a landlord who could impose charges on access and produce. A land reform conducted in the early 1950s removed this system of control, encouraging over-exploitation and depletion. There is no private cost of using CPRs anymore and, consequently, CPRs have declined. This resulted in soil erosion and redistribution of land resources, ultimately disadvantaging the poor.

If the way land is classified in India reflects how it is viewed for policy, then the general policy purposes for uncultivated land is not to promote productive land use but to protect property jurisdictions. Land policy pegged to property lines may neither address land as an economic resource nor productively shape the motives of those who use the land for economic ends. Insecurity about ownership and uncertainty about who benefits from fruits of longer term investments encourages short-term exploitation of land resources. Villagers will not plant or protect forests if they are not sure that forest produce will be theirs.

There are large discrepancies between the conditions of management assumed in current administrative structure and those actually prevailing on common lands. Forest departments act as custodians of more than 20 percent of the land, on the assumption that these lands are forested, unoccupied and with sufficient land pressure to endanger regulatory controls. But more than half the area is denuded, over-grazed and under private, rather than public control. There is need to survey tenurial arrangements

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