

Effectiveness of Existing Laws and Regulations to Prevent Encroachments of Stream Reservations

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ABSTRACT. Sri Lanka, with more than 2500 years of hydraulic civilization, has constructed highly complex systems of irrigation in the Dry Zone. Kings formulated the rules in consultation with high officials in the Kings' court. The King was the source of the laws. This ancient administrative system gradually changed after colonization and attention focused more on written rules and regulations of the government legislations than those based on customs, norms, and traditions of Sri Lanka. There are more than 50 legislations enacted in relation to the development and management of water resources along with the establishment of a large number of institutions. Despite all these, water resources are being degraded at an alarming rate. A preliminary study showed that there were adequate legal mechanisms and institutions to prevent water resources degradation. This study was carried out to determine the effectiveness of regulations and associated institutional arrangements to prevent stream encroachments. Two villages between Peradeniya and Gampola along the Mahaweli river were selected for the study. Questionnaire surveys, focus group discussions among institutional officers and interviews were conducted in these villages. The results showed that the existing regulatory mechanisms to protect stream reservation covered all aspects including eviction of encroachers. However, there are serious deficiencies in implementation of such regulations such as the lack of coordination among institutions, procedural lapses, political interference, and less enthusiasm of state employees to implement rules and regulations. The encroachers tend to occupy the reservations due to landlessness, poverty, and the social cohesion among their own communities.

Keywords: Encroachment, Legislations and Stream reservations

INTRODUCTION

Sri Lanka is a country blessed with water resources including 103 rivers, exceptionally designed minor and major irrigation systems and significant groundwater resources (Ministry of Environment and Natural Resources, 2008). According to Leach (1959), Sri Lankan ancestors had unique hydraulic civilization even before the beginning of the Christian era and the Kings made the rules in consultation with high officials in the King's court. The laws enacted by Kings were bound by customs and traditions and were based on religion. This ancient administrative system gradually changed after the colonial rule and attention focused more on written rules and regulations in the government legislations than the regulations based on customs, norms and traditions of Sri Lanka.

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The Irrigation Ordinance No: 32 of 1856 was the first enactment developed by the British colonial administration to legalize traditional irrigation practices, and to prescribe the condition for water extraction, especially for paddy cultivation. Since then more than 50 legislations were enacted in relation to the development and management of water resources along with the establishment of a large number of institutions (Samad, 2004). According to Madduma Bandara (2000) there are over 40 laws relating to water resources in Sri Lanka in different aspects like irrigation, agriculture and drinking water supply. Madduma Bandara (2000) also clarifies that there are even greater number of institutions related to water resources development and management in Sri Lanka. Irrespective of all these, water resources are being degraded at an alarming rate.

Preliminary studies showed that there are adequate number of institutions covering all the aspects of water resources development and management in Sri Lanka (Chandrasekara, 2010). This conclusion then led to the question as to why water resources degradation continues unabated in spite of the presence of all these regulations and institutions.

Encroachment of stream reservations is one of the major issues with regard to water resources degradation as it leads to water pollution due to increased soil erosion, stream bank erosion, sewerage and solid waste disposal. There are many regulations and institutions which are mandated to prevent stream encroachment. Most important legislations in relation to the protection of stream reservations are given below.

Legislations for stream reservations

Among many regulations, (a) State Lands Encroachments Ordinance No: 12 of 1840, (b) Land Development Ordinance No: 19 of 1935, (c) Crown Lands Ordinance No: 8 of 1947, (d) State Lands Ordinance No 8 of 1947, (e) State Lands (Recovery of Possession) Act No: 7 of 1979, and (f) Mahaweli Authority of Sri Lanka (MASL) Act No: 23 of 1979 are considered the major ones which make provisions for prevention of encroachments of stream reservations and specify procedures to be followed during violations of the rules including punitive measures. The Land Development Ordinance No: 19 of 1935 have provided the specifications for stream reservation as shown in Table 1.

Table 1. Stream reservations under the Land Development Ordinance No: 19 of 1935

River width (m)	Width of stream reservation (m)
Less than 4.6	20 from the bank of each side
4.6 – 15.2	40 from the bank of each side
More than 15.2	60 from the bank of each side

However, when there are private lands present within the stream reservations, the MASL had regularized that owners had the authority to use reservations only for residential purposes with separate waste water discharge systems located in the land side of the housing unit and 15 m. The review of above ordinances and regulations indicates that there are institutions and personnel responsible for maintaining the stream reservations. If any violates the regulations, procedures to be followed are clearly mentioned along with the punishments. In addition, provisions are also made for the victims to appeal against the judgment. However, river reservations in Sri Lanka are continued to be encroached in spite of the presence of all these regulations.

Objectives

This study was conducted to find reasons for continued encroachments of stream reservations, effectiveness of institutions mandated to protect stream reservations and constraints encountered by aforementioned institutions in discharging their duties.

METHODOLOGY

Study site

The study area was selected adjacent to the *Mahaweli* river from *Gampola* to *Peradeniya*. It is located within the study area identified for a research programme of a regional project called Crossing Boundaries (www.saciwaters.org). Two villages, namely *Elpitiya* and *Egoda Kalugamuwa* from *Udovita* and *Kalugamuwa Grama Niladari* (GN) divisions were selected since the river reservations have been encroached in both villages (Fig. 1).

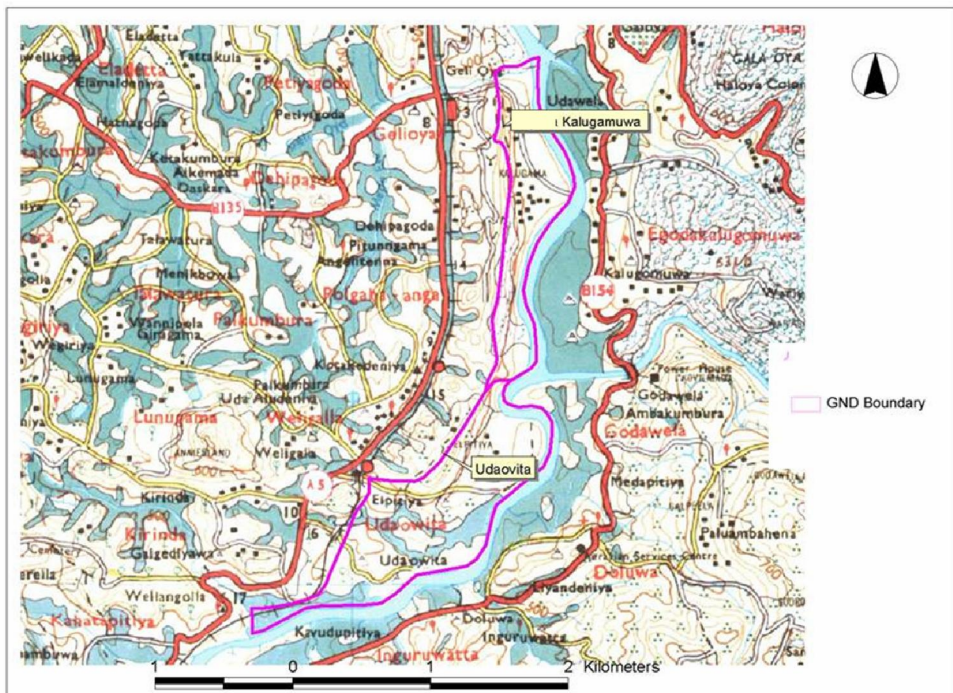


Fig. 1. Selected *Grama Niladari* divisions for the study

Egoda Kalugamuwa village was initially a rubber cultivated land up to the *Mahaweli* river. After the construction of *Kotmale* reservoir in early 1980s these lands were given to the displaced people from *Elpitiya* village, which went under floods in 1947. This fertile land within the flood plain was initially used both for living and for agricultural purposes for which permits were issued. Of the 830 families in the village, 24% have their houses within the stream reservation.

There is an ancient mosque in *Elpitiya* village, and to protect and manage the mosque, one very rich Muslim person has gifted part of his land to landless Muslim families. Other than them, there are few Sinhala and Tamil families who own lands in the village. Therefore, all

the villagers have deeds to their lands. However, demarcations of river reservations are not indicated in their deeds. Out of 150 families in the village, 26% of families have their houses within the stream reservation. Though the percentage encroachers of both villages are comparable, a larger proportion of the houses in *Egoda Kalugamuwa* village are located close to the river, compared to *Elpitiya* village, as shown in Table 2.

Table 2 shows the distribution of land holding of families within the specified distances to the river. Almost all the land holdings are located within the river reservation in *Egoda Kalugamuwa* village whereas nearly half of land parcels are located 30 m away from the river bank in the *Elpitiya* village.

Table 2. Percentage of land parcels within the specified distances to the river

Distance to the river or stream (m)	Percentage of the land parcels	
	<i>Egoda Kalugamuwa</i>	<i>Elpitiya</i>
Less than 6	13.3	0.0
6 – 10	40.0	14.8
11 – 15	33.3	18.5
16 – 20	6.7	14.8
21 – 30	6.7	3.7
31 – 40	0.0	11.1
41 – 60	0.0	22.2
More than 60	0.0	14.8

Field survey and interviews

Transect walks were carried out with villagers and GN to ascertain the existing situations of the villages and to prepare a resource map. This was followed by a questionnaire survey covering 30 individuals in each village.

After analyzing the questionnaires, key informant interviews with GNs of the relevant villages were conducted to obtain details of the history and background of the villages and what made present encroachers to use river reservations. *Udawalpaya* Divisional Secretariat is the major institution which is responsible for dealing with issues related to the encroachment of reservations in the selected villages. The Divisional Secretary (DS), the main responsible person representing the administrative service of the government, was interviewed to get information on, (a) whether DS is aware of encroachments, (b) why people encroach river reservation according to his perspective, (c) what action he has taken to minimize this problem, and (d) does he have constraints in discharging his duties along with his suggestions to minimize the problem. The Engineer Assistant of *Kotmale* MASL office was interviewed regarding the river reservation encroachment in selected villages, especially as to what MASL has done to protect the stream reservation according to the MASL Act.

A focus group discussion was carried out with 40 officers from 8 major government institutions in the Central Province, within which are two villages are located. These officers represented National Water Supply and Drainage Board, Education Department, MASL, Department of Health, Provincial Council, Kandy Municipal Council, and Central Environmental Authority. They were requested to provide information as to why people encroach river reservations and to make suggestions to minimize the problem. This was done

during a group exercise of a training programme jointly organized by Cap-Net Lanka and National Water Supply and Drainage Board.

RESULTS AND DISCUSSION

Demographic characteristics of the villagers

According to Table 3, Muslims are the majority in each of the selected villages. Though the majority of families have 3-6 members, number of family members in Muslim community is higher than the other two ethnic groups. This is related to cultural differences of communities. In *Egoda Kalugamuwa* village, married women were not encouraged to leave the village while women who came from outside the village in marriage had to settle down there. Married Muslim men go abroad for employment leaving their partners with their parents leading to extended family members. The pressure of this increasing population encourages people to enlarge their existing land up to the river.

Table 3. Ethnicity of encroachers

Village	Ethnicity of encroachers (%)		
	Sinhala	Muslim	Tamil
<i>Elpitiya</i>	37.0	59.3	3.7
<i>Egoda Kalugamuwa</i>	6.7	90.0	3.3

Livelihood of encroached communities in the two villages

As shown in Table 4, majority of the population is engaged in casual work outside the village earning daily wages. Both men and women take part in these activities due to poverty. Since both villages are located close to *Geli Oya* town, those with business ventures also reside in the river reservation. A sizable proportion of villagers also have regular employment in government and private sector institutions (Table 4).

There is substantial disparity of income within the community. This is quite prominent in *Egoda Kalugamuwa* village where few Muslim families reside with large land parcels with luxurious houses and vehicles whilst few poor families find it difficult to meet basic daily needs. This shows that there is no relationship between the income level of dwellers and encroachment of land. Other factors, such as easy access to business premises and living together with identical ethnic community are considered as important by the dwellers.

Table 4. Livelihood of encroached families

Type of livelihood	Percentage of the families	
	<i>Egoda Kalugamuwa</i>	<i>Elpitiya</i> village
Business and entrepreneurial only	25.9	20.0
Working abroad only	0.0	13.3
Casual work	37.0	33.3
Month end income only (Government and private sector institutions)	18.5	10.0
More than one income type	18.5	23.3

Ownership, size, use and location of lands in selected villages

As shown in Table 5, there is a clear difference in land ownership in the two villages. *Egoda Kalugamuwa* village was initially formed by resettling the people affected from floods in 1947 in *Elpitiya* village. Due to this reason, people in *Egoda Kalugamuwa* village do not have a deed to their lands by descent. Increased numbers of family members during last 60 years have made the initial land users to enlarge their owned lands and encroach towards the river reservation. The old inhabitants of *Elpitiya* villages have deeds to their lands.

Table 5. Variability of land ownership within the communities

Village	Ownership of the land (%)			
	Privately owned	Rented	Encroached	Annual permits
<i>Egoda Kalugamuwa</i>	0.0	3.3	90.0	6.7
<i>Elpitiya</i>	100.0	0.0	0.0	0.0

Figure 2 shows the distribution of land parcels in both villages. The sizes of land parcels are small in *Egoda Kalugamuwa* village compared to *Elpitiya*. Though there are no deeds to lands, recent settlers purchased lands or live in rented premises in *Egoda Kalugamuwa* village. Large land owners have sold or rented small land parcels which are much closer to the river or stream.

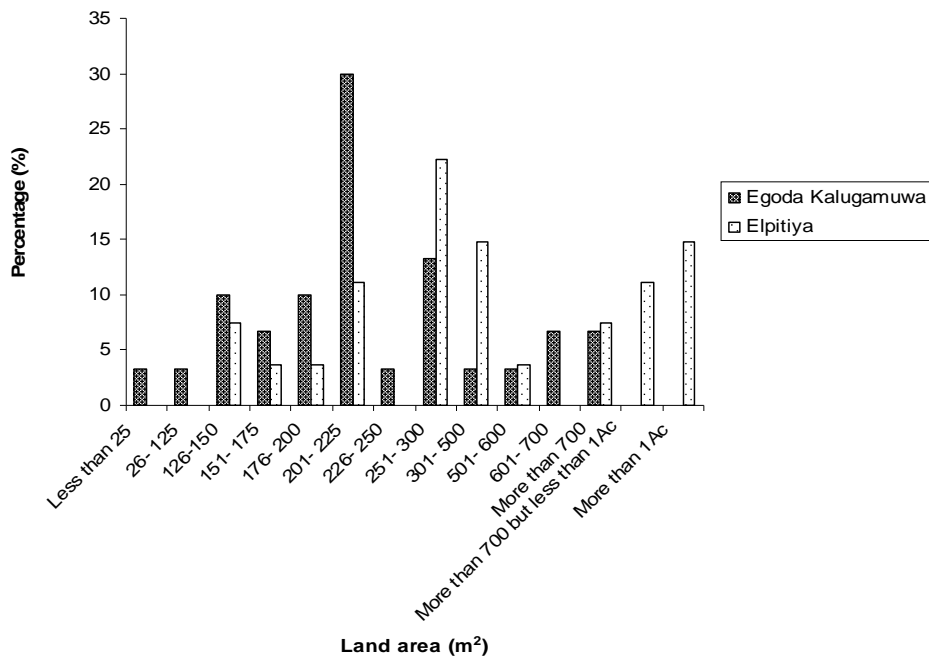


Fig. 2. Size distribution of land parcels in *Egoda Kalugamuwa* and *Elpitiya*

Most of the people use the land for living only while a few used it to accommodate livestock, gardening or small scale industries. It is important to mention that livestock rearing and gardening are not for commercial purposes but are purely for domestic consumption.

According to Table 6, most of the families have lands within the village and few have lands outside the village. Therefore, landlessness of the members of extended families tends to force the people to encroach the river reservation.

Table 6. Location of lands of encroached families

Village	Percentage of location of the lands			
	Only in given location	Same Divisional Secretariat	Different district	Different province
<i>Egoda Kalugamuwa</i>	93.40	6.60	0.00	0.00
<i>Elpitiya</i>	81.43	3.73	11.11	3.73

Availability of infrastructure facilities

Water and electricity are considered as basic public utilities of households. As service providers, National Water Supply and Drainage Board (NWSDB) and Ceylon Electricity Board, which provide water and electricity respectively, have the authority to ask clients to show the legal ownership of the land prior to rendering services. The 16th statement of the service agreement of the NWSDB mentions that the service of water supply should not be used to prove the legal ownership of land under any circumstances. A Commissioner of Oaths or a Justice of Peace should certify that the information mentioned in the application by the client is true. Though the statement was present that encroachers do not have authority to apply for water supply, the NWSDB supplies the water to any client, because water is considered as a basic need. When applying for electricity supply, GN and DS should certify the ownership of the land by the applicant.

Though the lands are near to the river or stream, all the respondents in *Egoda Kalugamuwa* village are provided with drinking water supplied by the NWSDB, whereas only 59% of water supply to *Elpitiya* village is provided by the NWSDB. The rest of the population use different sources such as domestic wells, streams and from neighbors.

As in the case of water supply, all the families of *Kalugamuwava* village are provided with electricity by the government whereas only 70% of the households of *Elpitiya* village has electricity.

Problems associated with waste disposal practices and flooding

Because of small land parcels, villagers of *Egoda Kalugamuwa* find it difficult to dispose solid waste within their premises and hence the easiest option is to throw it to the river. Garbage collecting outlets available along the streets of the *Egoda Kalugamuwa* village provided by the government do not help to solve the problem. Distance of travel, inadequacy of garbage collectors, and lack of suitable dumping sites are some of the reasons. Dumping yards selected by *Pradeshya Sabha* are located closer to the river or streams. This leads to contamination of water due to leachate. There are complaints regarding the dumping of animal offal from the butcheries to the river bank in *Egoda Kalugamuwa* village. Accumulation of solid waste promotes stagnation of water which increases mosquito breeding. A number of patients with dengue have been reported from the area.

Whole population has private toilet facilities in *Egoda Kalugamuwa* village. During heavy rains, some of the cesspits located near the river banks get flooded. Due to closeness of the

houses, conflicts arise when removing of wastewater through adjacent lands. However, in *Elpitiya* village most of the families use wastewater for gardening, because they have much larger lands compared to *Egoda Kalugamuwa* village.

Living in a river reservation has a negative impact both on the people and the river. Flooding causes solid waste to move backward towards the encroachers living at the edge of the river. Sand mining aggravates stream bank erosion, and as a result the houses located within 5 m distance to the riverbank in *Egoda Kalugamuwa* village are in danger of slipping into the river. Use of sand bags and bamboo by the people to minimize the bank erosion are not very effective. Use of vegetative measures like grasses for the river bank protection is not preferred by women due to reptiles. Some of the mothers complain that living in river reservation make their children sick due to phlegm. Sharing of common paths to enter the premises often leads to conflicts and the absence of any legal document for lands makes it more difficult to solve the problems.

Awareness of community on river reservation

A majority (56.7%) of encroachers in *Egoda Kalugamuwa* village know that their lands are located within the river reservation. However, most of them do not know that it is illegal, because some of the oldest individuals in the community lived in these lands since they were born. Older generation selected these lands since they were close to cities and provided access to many facilities. In *Elpitiya* village, 88.9% of families are aware of the need to keep river reservation though their deeds do not demarcate the river reservations exclusively. About 86.7% and 63% of families in *Egoda Kalugamuwa* village and *Elpitiya* village respectively responded that they were unaware of the institutions which were mandated to look after the river reservations.

Institutional responses in preventing encroachment of stream reservations

The GN in each village is the basic level of the employee representing the government administrative service and is responsible for informing the higher authorities about the encroachment of the reservations according to the existing regulations described above. Since the inhabitants have been in the two villages for a long time, GN is reluctant to take action to evict them as encroachers since it might lead to unpleasant reaction from both people and politicians. Though the encroached people do not have legal deeds, GN takes offenders to Court not because they are encroachers, but they default the payment (taxes) for the permits. The annual permits are given by the DS on the recommendation of the GN to landless people (or people without a deed to claim use rights).

The GNs of these villages justify the issuing of permits because of the landlessness and poverty of people (however, it is important to note that there are rich people also living within the reservation). The GN in *Egoda Kalugamuwa* village reported that annual permits are not issued to people who live within 15 m to the river bank. That means, 86.6% of land holdings are not supposed to get these since their land lots are located within this 15 m limit. The GN in *Elpitiya* village said that the lands were privately owned and even he could not interfere in demarcating the river reservations in privately owned lands. Both GNs mentioned that they considered this encroachment of stream reservation in a humanitarian angle and did not want to take drastic action to evict the people.

According to DS, *Uda Palatha*, every Sri Lankan citizen (or even temporary visa holders) have authority to enter and pass the State lands since lands are owned by the State. But, he

specifically mentioned that none of the civilians can use State lands for permanent constructions or living. The only way to regularize such lands for permanent occupation is to get the Minister in charge of lands to survey the reservations and declare it through the Parliament of Sri Lanka. However, it is considered a difficult and a lengthy process.

The DS further mentioned that, people become encroachers deliberately by themselves. The GOSL and MASL have donated land lots to poor, landless people in 1930's and in 1970's respectively. However, these original inhabitants have sold such lands to wealthy people and now living in the reservations illegally. These encroachments have further increased in 1990s due to political patronage. The DS maintains that he takes action to prepare quit notices only when GN complains about encroachments.

The MASL, another institution responsible for maintaining reservation along the Mahaweli river, does not take any administrative action, but provides help to protect the stream bank by giving bamboo seedling to the community. Lack of staff and funds were given as reasons for not taking action against the encroachers.

Responses from focus group discussion

All 40 participants representing government institutions in the Central Province agreed that stream encroachment is a serious problem leading to water pollution. Though there are legislations, encroachments of river reservations continue unabated. The group identified District and Divisional Secretaries and MASL as main institutions directly involved in the prevention of encroachment of stream reservations of Mahaweli river. However, there are other institutions which could indirectly influence the prevention of encroachment. For example, the Provincial Land Use Department is mandated to promote proper land use, and as a result maintain information on land use of the Central province. They only have information but lack authority to use them. The Divisional Secretary's Office has the authority, but do not have qualified people to prepare maps/plans. The Provincial Health Department could take action to prevent inappropriate sewerage disposal while Central Environmental Authority could take steps to prevent disposal of waste water to rivers. All these institutions work in isolation and do not work together to address a common issue. Lack of coordination among institutions was identified as the main constraint by the group in preventing the encroachment of stream reservation and resulting water pollution.

Demarcation of stream reservation according to the existing legislation was identified as a good starting point. However, it was also pointed out that there were institutional constraints with regard to funding, staff etc. Lack of awareness and political commitment were also identified as constraints. Political intervention was highlighted as a major factor which demoralizes the employees of the state institutions who are responsible to administer the rules and regulations.

CONCLUSIONS

The results reveal that the existing regulatory mechanisms comprehensively cover all aspects of water resource development and management in Sri Lanka. The large number of institutions created from such regulations have adequate mandate which most of the time appears to overlap among institutions. The regulations related to the prevention of encroachment of stream reservations are very comprehensive. However, there are serious deficiencies in the implementation of such regulations. Lack of coordination among

institutions, procedural lapses, political interference, less enthusiasm of state employees to implement rules and regulations were found as main reasons for the inactions of institution to prevent land encroachments along stream reservations.

This study also shows that legislations alone cannot prevent the encroachment of stream reservation. Landlessness, poverty and livelihood issues compelled people to encroach state lands along the streams. Access to water and road network, business opportunities and other infrastructure facilities also play a major role in determining the location. Cultural aspects of living together as extended families, security of spouses when one leaves for overseas employment, tendency for some ethnic groups to live within their own communities accelerate the expansion of encroachment. Political interference is considered as a major hindrance which prevents state employees to take serious action against encroachers. Therefore, it is important to take care of societal issues first in addressing the problems associated with encroachment of river reservations in the long run compared to short-term technical solutions to resolve issues on water pollution. Dialogue among relevant stakeholders including political authorities, officials and villagers is important to explore the possibilities to work towards solving this complex problem.

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