

RESEARCH ARTICLE

A POST-WAR DEVELOPMENT: EXPANSION OF ROADS AND LOSS OF TREES

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ABSTRACT

Trees were lost during expansion of A15 and A4 main roads in the Batticaloa city, Sri Lanka. Roads were widened into double from 10 m width and trees on either side were cut down within the limits. The age of the lost trees was between one and more than 100 years. About 40 tree species and 400 individual trees were lost in 6 km stretch. The majority of lost species were *Borassus flabellifer*, *Cocus nucifere*, *Albizia*, *Azadiracta indica*, *Mangifera indica*, *Terminalia catappa* and *Thespesia populnea*. Among the lost trees, higher percentage of palmyrah (22%) and coconut (17%) were recorded.

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INTRODUCTION

Trees in urban areas provide a number of benefits to the public that often go unrecognized such as habitat for urban biodiversity; improving air quality (Datta & Ghosh, 1985; Cardelino and Chameides 1990; Beslaneev & Kuchmazokova, 1991; Taha 1996, 1997; Stephen & Christopher, 1999; Nowak and Crane 2002); lessen the impact of the urban heat island effect and many more. While roads provide transportation access and other benefits, it generally associated with negative effects on biotic integrity in both terrestrial and aquatic ecosystems (Stephen and Christopher, 1999; Adekunlae, 2007; Fahrig and Rytwinski, 2009). Road expansion is one of the significant post-war (after 2009) development activities in the Batticaloa district, Sri Lanka, which was destructive in an ecological point of view. It is necessary to document the losses of the event for future reference.

Study Site And Survey

The study site was the Batticaloa urban area having “A-grade” main road, which falling under the Road Development Authority (RDA). The extend of this road is 6 km that include A15 and A4 main roads (Figure 1). The survey designed to collect the name and number of tree species about to cut and cut. Discussions were held with the District Secretary, Mayor/Municipal Council, Road Development Authority (RDA) and environmental interest parties in the Batticaloa.

RESULTS AND DISCUSSION

The width of the previous road was about 10 m; and 21 m at present. The entire infrastructures, buildings and trees were mandatory removed within 9.6 m from the centre median on both sides. The age of the lost trees was between one and more than 100 years.

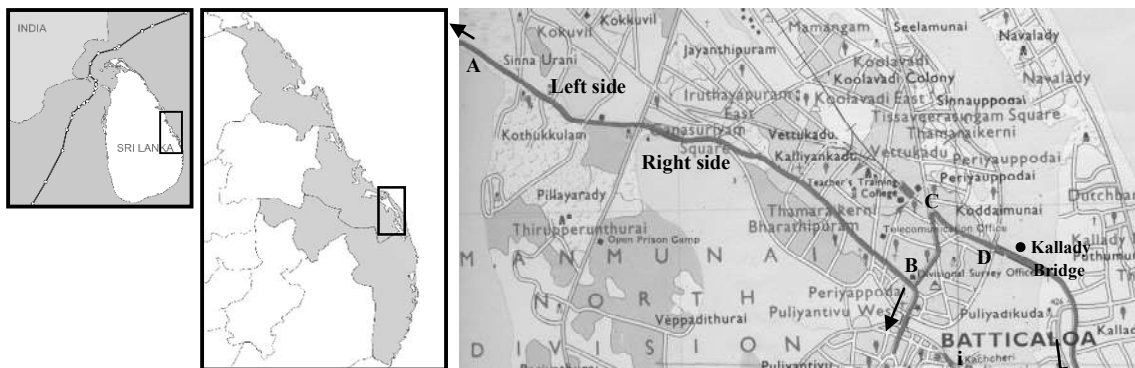


Figure 1 The study site, from A to D; A-B indicates A15 main road and B-C-D indicates A4 main road

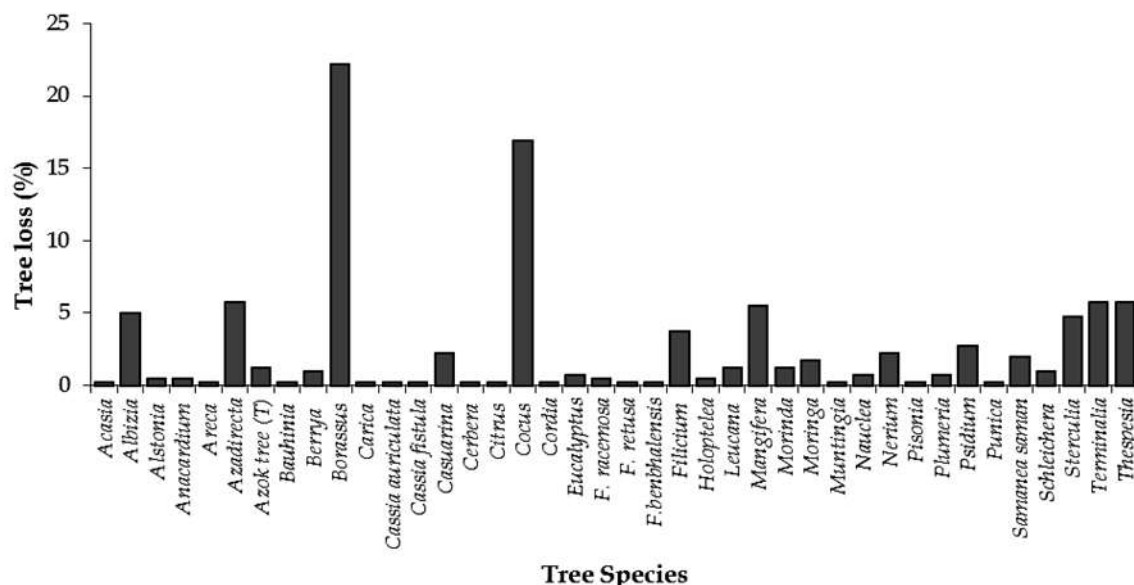


Figure 2 Percentage of tree loss along the A11 and A4 roads

Trees of historically important (planted by the British rulers) and act as land marks for many places were lost. About 40 tree species and 400 individual trees were lost within 6 km (Table 1).

“tree specific”. Nowadays the names of the places are existed, but the trees are not available.

Table 1 Lost trees due to road expansion, E - English name

No	Tree Species	Name (E)	No	Tree Species	Name (E)
1	<i>Acacia auriculiformis</i>	Ear-leaf acacia	21	<i>Ficus retusa</i>	Tiger bark ficus
2	<i>Albizia sp</i>	Albizia	22	<i>Filicium decipiens</i>	Fern tree
3	<i>Alstonia scholaris</i>	White cheese wood	23	<i>Holoptelea integrifolia</i>	Indian Elm
4	<i>Anacardium occidentale</i>	Cashew	24	<i>Leucaena leucocephala</i>	Leucaena
5	<i>Areca catechu</i>	Areca	25	<i>Mangifera indica</i>	Mango
6	<i>Azadiracta indica</i>	Neem	26	<i>Morinda tinctoria</i>	Indian mulberry
7	<i>Bauhinia tomentosa</i>	Butterfly tree	27	<i>Moringa oleifera</i>	Drumstick
8	<i>Berrya cordifolia</i>	Trincomalee wood	28	<i>Nauclea orientalis</i>	Bur tree
9	<i>Borassus flabellifer</i>	Palmyra	29	<i>Nerium oleander</i>	Oleander
10	<i>Carica papaya</i>	Papaw	30	<i>Pisonia grandis</i>	Lettuce tree
11	<i>Cassia fistula</i>	Golden shower	31	<i>Plumeria obtusa</i>	Graveyard flower
12	<i>Cassia auriculata</i>	Tanner’s cassia	32	<i>Psidium guajava</i>	Guava
13	<i>Casuarina equisetifolia</i>	Casuarina	33	<i>Punica granatum</i>	Pomegranate
14	<i>Cerbera manghas</i>	Suicide apple	34	<i>Samania saman</i>	Rain tree
15	<i>Citrus aurantifolia</i>	Lime	35	<i>Sterculia foetida</i>	Java-Olive
16	<i>Cocos nucifera</i>	Coconut	36	<i>Terminalia catappa</i>	Country-Almomd
17	<i>Cordia obliqua</i>	Clammy ceerry	37	<i>Thespesia populnea</i>	Indian tulip tree
18	<i>Eucalyptus sp</i>	Eucalyptus	38	<i>Muntingia calabura</i>	Jam tree
19	<i>Ficus benghalensis</i>	Indian banyan	39	<i>Saraca sp (Asoka?)</i>	Ashoka
20	<i>Ficus racemosa</i>	Cluster fig tree	40	<i>Schleichera oleosa</i>	Ceylon oak

Eight species were lost more than 5% such as *Albizia sp*, *Azadiracta indica*, *Borassus flabellifer*, *Cocos nucifera*, *Mangifera indica*, *Sterculia foetida*, *Terminalia catappa* and *Thespesia populnea*. Among the lost trees, higher percentage of Palmyrah (22%) and Coconut (17%) were recorded (Figure 2).

Integrating participation of multi-stakeholders and transparencies in planning and implementation are essential in any development activities, which was deficit in this case. How do we engage us in future expansion activities? Are defined development approaches appropriate in reality?

Planning is one of the best practices to project success. Inadequate participation of various stake holders (public, intra-inter sector agencies, EIA/IEE) is the main defect during the planning process, which was revealed during the discussions. There have been no parking places available along the expanded road, at present, which is very important in urban planning. In Batticaloa, some of the names of the places are

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