

“Our Wetlands-Our Future”

A Conservation programme for the Bolgoda Wetland complex

Mid Term Progress Report

Submitted by

Sri Lanka Water Partnership

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Resource persons:

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Why Wetlands?

Wetlands are nature's true gifts. In a tropical country like Sri Lanka, wetlands exist everywhere with their numerous links with the society by providing significant economic, social and cultural benefits. They are important for primary products such as pastures, timber and fish and support recreational and tourist activities. Wetlands also help reduce the impacts of natural disasters such as flooding and droughts, maintain good water quality in rivers, recharge groundwater, store carbon, help stabilise climatic conditions and provide cool micro climatic conditions especially in cities. They are also important sites for biodiversity.



Bolgoda Wetland depicting aquatic vegetation



Blue water lily in Bolgoda South lake

1. Current situation.

Urban wetlands face increasing threats due to unsustainable developmental activities. Reclamation for urban and industrialization development has become the principle long term threat for these wetlands. These activities have greatly diminished our nation's wetlands resources; as a result, we no longer have the benefits they provided. Recent increases in flood damages, drought damages, and the declining of aquatic biodiversity are, in part, the result of wetlands degradation and destructions.

This situation warrants urgent attention of all stakeholders, since wetlands play a major role in landscape planning under the current “Megapolis” development programmes which has been initiated by the government. Especially, following the recent destructive flood event happened in June 2016, the country started looking at the functions and values of wetlands in a different way and recognized their contribution to mitigate the impacts of natural hazards such as floods.

2. Involvement of Sri Lanka Water Partnership (SLWP)

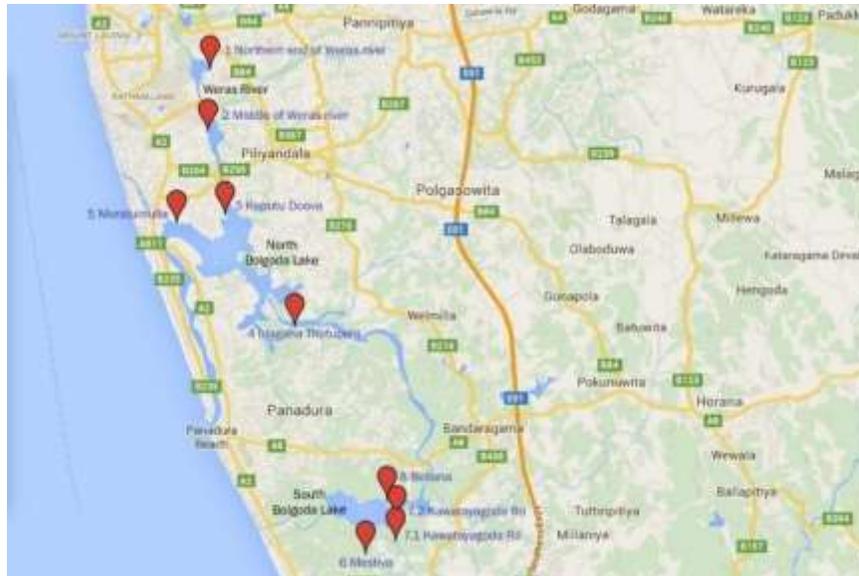
Recognizing the importance of investigating the present condition of and threats to urban wetlands and possible remedial measures to restore and conserve them, we initiated integrated studies on selected urban wetlands. In most of these activities our key collaborators were Central Environmental Authority (CEA) and Sri Lanka Land Reclamation and Development Corporation (SLRDC). So far, we have initiated and supported establishing the links between the regulators/ local government members and community members and facilitating discussion on several critical issues on urban wetlands. As a part of an integrated urban wetland management programmes we have carried out several activities in relation to Bolgoda wetland complex and as a result we were able to establish of 6 Environmental CBOs to protect Bolgoda and made arrangements to register these under the CEA.

Together with our new collaborative partners, Sri Lanka Biodiversity and Sampath Bank PLC we are continuing to protect wetlands.

3. Why Bolgoda Wetland complex?

The Bolgoda wetland is the largest natural freshwater lake in the country. This complex is interconnected to major urban wetlands including Diyawanna and the Talangama tank.

The lake which covers 400 square kilometres, comprises two vast fresh water bodies, namely, the Bolgoda North Lake and the Bolgoda South Lake connected by Weres Ganga. It is a crucial part of the Kalu Ganga river basin.



Map of Bolgoda wetland representing study sites

The Bolgoda wetland, although best known for its natural beauty and wildlife habitat values, also provides many water quality improvement and management services. It is tightly linked with the lives of the communities of the area and hence diverse community / ecosystem interactions exist. It serves as a rich fishery ground on which many people depend on for their livelihood. Another prominent aspect are opportunities for the tourism and hospitality industry which is rapidly growing in the area. Thus, protecting and restoring the wetland and its sustainable development will contribute positively to the economic health, public safety and quality of life of the local communities.

As per anecdotal and empirical evidence, the significant ecosystem services and social and economic benefits offered by this wetland provide adequate rationale for enhanced its conservation efforts.

Yet, this ecosystem is under immense pressure from unsustainable anthropogenic activities. In a pilot study carried out by the Sri Lanka Water Partnership (SLWP), it was evident that some areas are adversely affected by indiscriminate discharge of industrial effluents and raw sewage which have led to pollution of the water. In addition, the disposal of solid waste in different forms are common in the lowlands. Due to increased developmental pressure, unsustainable land use

practices including encroachment, filling and illegal constructions too are rampant in this environmentally sensitive area.

4. Progress of activities (January- June 2016)

This progress report outlines some of the key accomplishments and new scientific findings established during the first 6 months of the project. It represents the actions across 2 phases.

Phase I: “Wetworking”- Stakeholder consultation workshops for enhanced community participation for wetland conservation and awareness.

Phase II: Field Study on the Bolgoda wetland complex

- **Phase I:**

Stakeholder consultation workshop on Bolgoda Wetland

Held on 29 Feb 2106 at IWMI Auditorium, Battaramulla

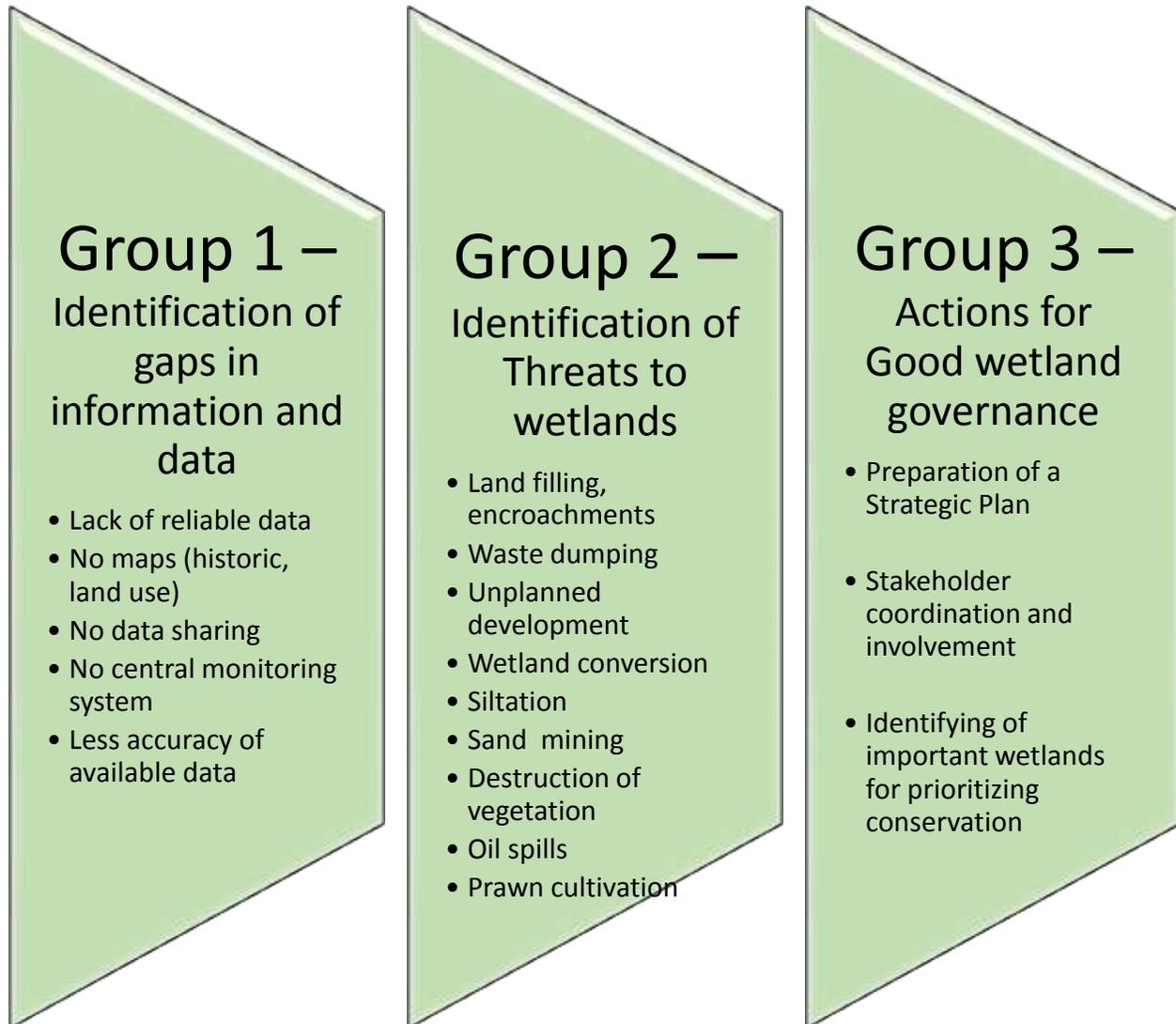
This programme was designed to raise awareness highlighting the services and value of Bolgoda wetland complex as well as legislative and policy framework pertaining to this ecosystem.

One major stakeholder who participated in awareness raising is the regulator, Central environmental Authority. This time the focus group was representatives from Governmental Organizations and Local Authorities, Grama Niladharis (GS), Developmental Officers and citizens groups in Bolgoda area and included 48 participants.

Eng. Badra Kamaladasa, Hon. Chair/ SLWP, explained the activities carried out by SLWP in relation to wetland conservation and while Prof. Deepthi Wickramasinghe, Hon. Executive Secretary/ SLWP delivered a speech explaining the values and services of wetlands and the importance of conserving these habitats. Prof. Champa Nawaratne gave a presentation on the economical services provided by wetlands. Ms. Priyanganie Gunathillake , Dy. Director/ Wetland Unit, CEA made a presentation on Bolgoda wetland and the role of the CEA as the regulatory Authority.

The programme ended up with an interactive discussion on the issues and problems related to the ecosystem and possible remedial measures.

Participants shared their views and made suggestions for enhanced conservation of the Wetland complex which is given below as a summary.



Awareness programmes for school children

Under this, two programmes to educate school children on conserving the Bolgoda wetland complex were held on 28th June 2016 in two locations, where most of the students are residing in the watershed of the wetland. All of them, their family members and school mates are somehow or other are or can become stakeholders of this wetland conservation.

The structure of this awareness programmes was focused on active learning through interactive sessions including presentations, discussions, question and answer session etc. Panel of resource persons were Prof. Deepthi Wickramasinghe, Eng. Badra Kamaladasa, Dr. Missaka Hettiarachchi and Ms. Chethika Gunasiri. Ms. Sherani Ruberu from Sri Lanka Biodiversity and Thusitha Peries from Sampath Bank too attended this event.



Ms. Kamaladasa answering student's questions (DV)

School Programme 1: Dharmaraja Vidyalaya (DV), Piliyandala (117 students attended)

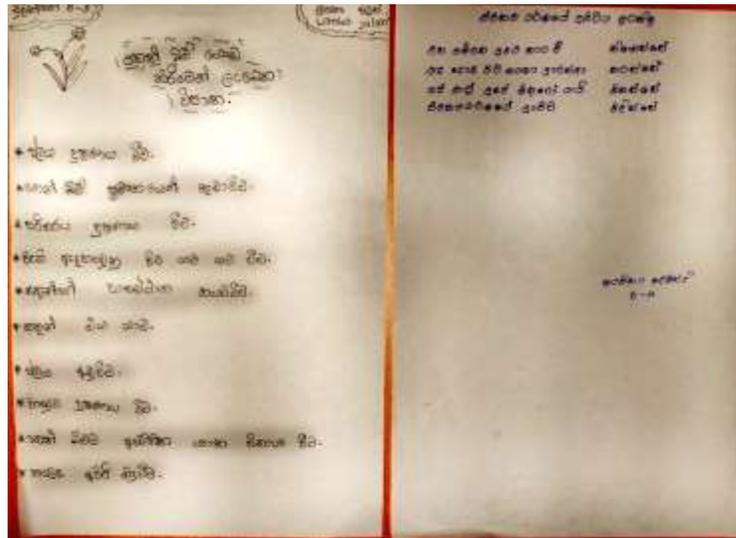
School Programme 2: Sir John Kothalawela Vidyalaya (SJKV), Piliyandala (60 students attended)

SLWP distributed an information leaflet on wetlands and “Water Messenger” badges to students.



Ms. Gunasiri in an interactive discussion with students (SJKV)

As the final activity at each programme, the students were given a chance to express their knowledge about wetlands and its conservation, using their creative abilities in poetry, art and essay writing. This was carried out by individual students as well as groups and interestingly students came out with excellent poems, posters and essays.



Students' thoughts about wetlands including a poem (DV)



Poster by a group of student following an interactive learning session (SJKV)

- **Phase II**

- Field Study on the Bolgoda wetland complex**

- a. Investigations on biodiversity***

A survey on aquatic (fish and amphibian) and terrestrial (reptiles, birds and mammals) fauna in the wetland and immediate surroundings was started and carried out and representative parts of the wetland complex (Bolgoda North Lake, South Lake) was taken into consideration. In selected areas, the faunal surveys were carried out according to standard protocols and methodologies that include line transect method and visual encounter surveys. No animals were captured or collected and all activities were carried out with the minimal disturbance to the environment. Prof. Wickramasinghe and her assistants carried out the field work.

In each month from January – May, at least 3 days were spent on field study visits. Yet in June, only 2 days were possible due to inclined weather.

Identification of species was done using standard field guides, keys and literature.

A species list with information on endemism, conservation status as per the IUCN Red List will be formulated at the end of the study.

Some results are presented in annex 1. This will be continued in the forthcoming months.

- b. Development of a Vulnerability Index for different areas of the wetland to determine the extent of environmental degradation***

The above components were started to identify the activities that can pose harm to the health of wetland. Representative parts of the wetland complex (Bolgoda North Lake and South Lake) were selected and visited to study the activities that degrade the environment including water pollution input, solid waste dumping, filling and encroachment, destruction of natural vegetation.



Illegal waste dumping at Bolgoda North lake

This vulnerability assessment was carried out in natural landscape (minimized human activity) and in disturbed areas (visible impacts due to anthropogenic activities).



**Bolgoda North lake:
areas under invasive Salvenia and Wel atta**



Ibis at Bolgoda south lake

A rank will be given for each visible activity and a cumulative index will be developed at a later stage as follows:

1-No signs of threat 2-Less vulnerable 3- Vulnerable 4-Extremely vulnerable

The following table includes some observations of natural and disturbed sites.

Natural	Disturbed	Natural
Idagaha Thotupala	Moratumulla	Mestiya
-Southern side of North lake.	- Western side of North lake.	- Southern side of South Lake.
-Marshland and the main water body of North lake.	- Highly populated	-Marshland and the main water body of South lake.
- Vegetation consist of small aquatic plants, grass, ferns, invasive <i>Anona glabra</i> and <i>Cerbera odollum</i> mainly.	- Solid waste dumping by timber deports	-Stagnated water, possible accumulation of pollutants
-Water brackish according to the fish species observed. Salt water intrusion possible	- Water brackish according to the fish species observed. -jellyfish species present indicating salt water intrusion	-Vegetation consist of invasive <i>Anona glabra</i> , ferns and grass spp mainly.



Purple coot at Bolgoda north lake

5. Proposed activities for the next 6 months

- **Phase I:** “Wetworking”- Stakeholder consultation workshops for enhanced community participation for wetland conservation and awareness.

Under this activity, another one and final awareness seminar for school children will be held in September.

- **Phase II :** Field Study on the Bolgoda wetland complex

Field studies will be continued to investigate biodiversity profile and vulnerability assessment will continue.

6. Problems faced

Due to inclined weather (heavy rains, flooding) persisted in some periods in May – June, field visits were not possible. Similarly, school programme had to be postponed due to the very same reason. Yet, these activities were started as soon as the situation changed.

Annexure 01 – summary of results/ Faunal survey in Bolgoda wetland comple

(Please note that this table includes only a part of the results)

Table 1: List of Butterflies

Family	Common name
Papilionidae	Common Mormon
	Crimson Rose
	Tailed Jay
Pieridae	Jezebel
	Psyche
	Common Grass Yellow
	Three Spot Grass Yellow
	Lemmon Emigrant
	Lesser Albatross
Family	Common name
	Mottled Emigrant
	Small Grass Yellow
Nymphalidae	Common Crow
	King Crow
	Common Sailor
	White Four Ring
	Common Leopard
	Peacock Pancy
	Grey Pancy
	Blue Glassy Tiger
	Glassy Tiger

	Tawny Coster
	Common Tiger
	Plain Tiger
	common Bushbrown
	Medus Bushbrown
	Common Palmfly
Lycaenidae	Tailless Lineblue
	Tiny Grass Blue
	Apefly
	Plains Cupid
	Indian Cupid
	Lime Blue
	Plain Four Line Blue
	Common Cerulian
	Dark Cerulian
	Milky Cerulian
Family	Common name
	Lesser Grassblue
	Redspot
	Red Pierrot
Hesperiidae	Small Branded Swift
	Indian Palm Bob

Table 2: List of Reptiles

Family	Common name
Vranidae	Land Monitor
	Water Monitor
Agamidae	Green Forest Lizard
	Garden Liard
Colubridae	Checked Keelback Water Snake
Bataguridae	Spotted Black Turtle
Skincidae	Rock Skink
Crocodylidae	Saltwater Crocodile
	Total number of individuals
	Total number of species

Table 3: List of Birds

Family	Common name
Podicipedidae (Grebes)	Little Grebe
Pelicanidae (Pelicans)	Spot-billed Pelican
Plalacrocoracidae (Cormorants)	Indian Cormorant
	Little Cormorant
Anhingidae (Darters)	Oriental Darter
Ardeidae (Herons)	Grey Heron
	Purple Heron
	Great Egret
	Intermediate Egret
	Little Egret

	Cattle Egret
	Indian Pond Heron
	Straited Heron
	Black-crowned Night Heron
	Yellow Bittern
	Black Bittern
Ciconiidae(Storks)	Painted Stork
	Asian Openbill
Anatidae (Ducks)	Lesser Whistling Duck
	Shikra
	Brahmini Kite
	Crested Serphant Eagle
	White-bellied Sea Eagle
Family	Common name
Rallidae (Waterhens)	White Breasted Waterhen
	Purple Swamphen
Recurvirostridae (Stilts)	Black-winged Stilt
Charadriidae (Plovers)	Red-wattled Lapwing
Scolopacidae (Sandpipers)	Common Sandpiper
Laridae (Terns)	Whiskered Tern
Columbidae (Pigeons)	Rock Pigeon
	Spotted Dove
	Green Imperial Pigeon
	Sri Lanka Green pigeon
Psittacidae (Parakeets)	Rose Ringed Parakeet

Cuculidae (Cuckoos)	Grey Bellied Cuckoo
	Asian Koel
	Greater Coucal
Apodidae (Swifts)	Asian Palm Swift
Alcedinidae (Kingfishers)	Pied Kingfisher
	Common Kingfisher
	Stork Billed Kingfisher
	White Throated Kingfisher
Meropidae (Bee Eaters)	Blue-tailed Bee Eater
Capitonidae (Barbets)	Brown-headed Barbet
	Sri Lanka Small Barbet
Picidae (Flamebacks)	Black Rumped Flameback
Hirundinidae (Swallows)	Barn Swallow (migrant)
Family	Common name
	Red Rumped Swallow
Motacillidae (Wagtails)	Forest Wagtail
	Paddyfield Pipit
Compephagidae (Minivets)	Small Minivet