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A POLITICAL ECOLOGY OF SRI LANKA'S URBAN AND REGIONAL WETLANDS

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Introduction

In the contemporary times, Sri Lanka's wetlands have undergone vast destruction and degradation, driven by urban sprawl, infrastructure projects, and loss of traditional uses. Politically, this period was characterised by free market economic policies, privatisation, a service and export-oriented economy, civil war (1983–2009), and ubiquitous corruption. It corresponds to the time globally referred to as the "neo-liberal" period by many scholars (Marcuse and Van Kempen 2000; Dasgupta 2007), which was mainly demarcated by the overturning of post-world-war welfare economic policies.

Ecologically, wetlands are defined as transitional ecosystems (ecotones) between terrestrial and aquatic ecosystems (Mitsch and Gosselink 2007). They include a large variety of habitat types, such as freshwater marshes, estuaries, mangroves, swamp forests, salt marshes, inland lakes, and even human-managed systems, such as paddy fields. Vegetation, faunal, hydrological, and soil characteristics of wetlands can change in short periods compared to other ecosystems, making their ecologies highly transient. Human communities have historically thrived in wetland environments. However, since the emergence of capitalism, wetlands have been seen as dismal landscapes due to their transient unpredictable nature (Purseglove 1988). They are hard to traverse, difficult to cultivate, and often impossible to build on. Humans have altered and drained wetlands for specific purposes from ancient times. Under capitalism however, grand schemes were launched to tame large swaths of wetlands and convert them to "productive" forms of land use. This perception of wetlands as dispensable barriers to human progress was engraved into development thinking, policy, institutions, education, and the public psyche for nearly two centuries.

In Sri Lanka, this narrative still largely dominates development policies, which decide the fate of wetlands. In colonial times, the wetlands were viewed mainly as wastelands. An excerpt from an early last century report on flood protection of *Colombo* exemplified this view:

> It is, therefore, amazing to find that there should have been allowed to exist up to three square miles of swamp so close into the city, that at various points the swamp approaches to within a mile of the Town Hall.
>
> *(Kitching 1937: 2)*

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Despite Sri Lanka gaining independence in 1948, the negative perception of wetlands was passed on to post-colonial development thinking and policy-making. The colonial aspiration of putting the wetlands into "better use" actually came into practice in the 1960s. A 1966 report by the irrigation department on "Reclamation of swamps around the city of Colombo" says:

> there are large extents of marshy land … abandoned except for a small extent where grass and vegetables are grown … can be put into beneficial uses.
>
> *(DRD 1966: 39)*

Given the small size of the country (65,610 sq km), Sri Lanka has a significant extent of wetlands, with more than 4,500-km rivers and streams, 20,000 ha of marshes and floodplain lakes, and paddy land covering 12% of the total land area (Van Zon 2004). During the colonial (up to 1948) and post-colonial (1948–1980) periods, urban and peri-urban areas along the Western coast saw large-scale wetland modification. Diking, canalising and change of land management practices have irreversibly changed wetland hydrology and ecologies. Traditional wetland uses for paddy cultivation, fishing, and transportation have almost disappeared with time. Rural wetlands were spared large-scale destruction in the colonial and post-colonial periods. However, the fate of Sri Lankan wetlands dramatically changed after 1980.

The neo-liberal period in Sri Lanka also saw some important milestones in environmental governance. The principal milestone among them was the National Environment Act (NEA) of 1980, which provided an integrated framework for environmental management nationally. Wetlands gained formal recognition in environmental governance after Sri Lanka entered the Ramsar Convention in 1990 (Convention on Wetlands of International Importance). Currently, six Sri Lankan wetland sites are designated under the Convention. However, the efficacy of such normative advancements in environmental governance has been critiqued both in Sri Lanka and globally (Swyngedouw and Heynen 2003; Hettiarachchi, Morrison and McAlpine 2017). They have been clearly inadequate to prevent or even mitigate the unrelenting assaults on nature during the neo-liberal period. Neither have they been able to resolve the grave environmental injustice created by these issues.

Based on contemporary scholarly and grey literature, this chapter characterises the scale and nature of ecological impacts on wetlands in Sri Lanka, after 1980 and their social and economic outcomes. I then analyse the policy and institutional trajectories, which produced these outcomes, and the socio-political resistance they have triggered. The chapter mainly uses a political ecology lens (Robbins 2012), specifically drawing from scholarship on environmental justice, land-grabbing, policy dismantling, and social movements (Pulido 2000; Bebbington 2004; Bauer et al 2012; White et al 2012).

Sri Lanka's Wetlands: Diverse Ecologies and Perceptions

A large array of ecosystems or "wetlands types" come under the Ramsar Convention's definition of wetlands.[1] Sri Lanka's 103 watersheds support many of these wetland types. Wetland types are characteristic of eco-climatic conditions of different regions. They provide different ecosystem services, and are perceived and utilised by the communities accordingly.

The highest prevalence of wetlands in the country is in the wet-zone coastal belt (south-western coast), where the most common wetland type are freshwater floodplain marshes. Characterised by low emergent vegetation (such as grasses) and bog soils, freshwater marshes of the wet zone have supported the livelihoods of coastal communities for many centuries.

Some historical sources, such as the 14th-century poetry tradition called *Sandesha Kavya*, recorded how these magnificent ecosystems were intertwined with social life in pre-capitalist times. They presented vivid poetic renditions of daily life in the marshes – cultivation, fishing, grazing, and recreation. In contrast to capitalist notions of an "intractable landscape," for pre-capitalist coastal communities, the marsh waterways were the principal mode of transport.

Estuarine wetlands, lagoons, and mangroves are the second most common wetland types in the island, found in the lower reaches of all major wet and dry zone watersheds. Being brackish water systems, with salt tolerant plants, and various fish and crustacean species, these wetlands play a major role in estuarine and near shore fishing even today. Both freshwater marshes and estuarine wetlands sustain a vast bio-diversity. Charismatic species, such as saltwater crocodiles, fishing cat, otter, and a plethora of water birds, are often featured by environmentalists to demonstrate the ecological value of these ecosystems.

The interior wetlands of Sri Lanka are dominated by human-managed ecosystems, such as paddy lands and irrigation tanks. Natural lakes, villus (wet grasslands), and swamp forests also form a smaller but important fraction of interior wetlands. These ecosystems have also been extensively used traditionally for farming, fishing, timber harvesting, and for collecting forest products.

The modern scientific study of all wetland types dates from the 19th century. Early natural history works by British bureaucrats and explorers, such as Tennent's Ceylon (1860), have described animal and plant life in the estuarine wetlands and marshes. Later works included more in-depth studies of wetland species, especially water birds and migratory birds. Organisations of nature lovers and naturalists which emerged from the late 19th century, such as the Ceylon Game and Fauna Protection Society (established 1894, later renamed Wildlife and Nature Protection Society – WNPS), also played a role in early wetland studies.

However, these earlier studies were largely confined to individual species or specific sites. Some specifically focused on the hunting and fishing potential in wetlands (e.g. Harry Storey's [1906] book *Hunting and Shooting in Ceylon*, dedicated chapters for water birds hunting and shooting in inland tanks). They did not capture the important role of wetlands as transient ecosystems in landscapes and watersheds. The first integrated wetlands studies in Sri Lanka came after the country's entry into the Ramsar Convention.

A series of systematic wetland status studies were conducted on major wetland systems under the "Wetlands Conservation Project" launched in 1990 by the Central Environmental Authority, where a series of wetlands status reports and management conservation plans were prepared. The studies were based on Ramsar principles and looked into broader ecologies of the wetlands, ecosystem services, social and economic pressures, and patterns of degradation. For the first time, they revealed the alarming state of wetlands, especially the marsh ecosystems on the Western Coast (CEA 1994, 1995).

From the late 2000s, the focus of wetland studies shifted, from environmental status reporting to in-depth analysis of impacts, including reduction of wetland extent, ecological transformation, and fate and transport of pollutants (Priyadarshani et al 2015; Kaleel 2017; Amarasinghe 2019). Studies on socio-economic drivers and consequences of wetland degradation also expanded during this period (Hettiarachchi et al 2017; Nijamir 2017), giving better insights into the differential impacts on different social groups, such as women, the poor, and ethnoreligious minorities. A wetland directory for Sri Lanka was published in 2006 jointly by CEA, the International Conservation Union (IUCN), and the International Institute of Water Management (IWMI).

In the past decade, scientific inquiries on both urban and rural wetlands have substantially broadened and diversified. Wetland scientists have ventured into new areas, such as climate change impacts and wetland ecosystem services driven by global trends (McInnes and Everard 2017;

Katupotha 2018). In addition, the advancement of Geographic Information Systems (GIS)-based studies has enabled a better spatial understanding of the scale of wetland degradation (Gunawardena et al 2015). Studies conducted for the Colombo Wetland Strategy also marked a milestone in these new developments (GoSL 2016).

Perception of wetlands by different stakeholders is as transient as wetland ecologies. The communities traditionally perceived and valued wetlands through their uses and ecosystem services. The scientific understanding of the country's wetlands, which was initially confined to natural history and species conservation perspectives, has broadened after the 1990s to include different aspects of social-ecological interactions. These community and expert perceptions of wetlands did influence wetland governance to some extent. However, broader political and economic dynamics have been more decisive in determining the fate of Sri Lankan wetlands in recent times.

The Changing Tide of Wetlands Governance

The first political interest in Sri Lanka's wetlands was seen in the early 1900s with regard to urban expansion and flood control in Colombo. The Colombo Flood Protection Scheme (DI 1947) modified the hydrology of more than 10,000 ha of wetlands around Colombo in an irreversible way with bunds, deep canals, lock gates, and pump houses. Traditional uses of these wetlands disappeared, and large swaths of marshland were declared flood detention areas.

The vision of filling up and converting the marshes around Colombo into built-up areas was realised in the mid-1960s, initially for building low-income housing schemes (DRD 1966). Colombo District (Low Lying Areas) Reclamation & Development Board (presently Sri Lanka Land Development Corporation – SLLDC) was established in 1968 specifically for this purpose. Informal settlements within the marsh areas, both in and around the city (e.g. Wanathamulla, Meethotamulla, Orugodawatta) were allowed to be reclaimed, and some lands were distributed for housing blue-collar workers of the Municipalities, Railways, and other state-managed industries.

Until the late 1970s, wetland reclamation was predominantly driven by welfare policies, such as providing public housing or common facilities. However, from 1980 onwards, modification and reclamation of wetlands took a distinctly different character. Public welfare schemes faded away and wetlands were seen as a potential space for the expansion of infrastructure and urban real estate (Hettiarachchi et al 2017). The Colombo Master Plan Project of 1978 called for a restructuring of urban space to suit the new free market era. The eradication of slums and the expansion of the city into the eastern suburbs were two major elements of the plan. Impacts of the Development Sector on wetlands from 1980 onwards were largely determined by three policy trends: large-scale wetland acquisition and modification, privatisation of wetlands, and displacement of wetland communities. The impacts of these policies are hard to exactly quantify, however, certain examples provide perspective to their scale.

The first large-scale wetland conversion in Sri Lanka was the construction of the new Parliament House and other government premises in the newly declared capital city of Sri Jayewardenepura. More than 750 ha of marsh and paddy land were dredged or filled. Canal widening, and bank stabilisation work under numerous flood control and drainage improvement projects, from 1990 to the present, further altered the hydrology of wetlands around Colombo. Industrial zones (Free Trade Zones) established along the Western coast were also carved into marsh or paddy lands, and large tourist resorts emerged along estuarine wetlands.

By the mid-1990s, corporate real estate interests entered the wetlands around Colombo. The introduction of new construction technologies, such as bored-piling made construction in the weak wetlands soils much easier. Multi-storey residential and commercial buildings were constructed in or around the marshes, taking advantage of the waterfront views. In 1997, 150 ha of marsh and

paddy land in the Kotte area, previously acquired for flood retention purposes, was handed over to a private company for a multi-purpose recreational and property development project. Once worthless, marshlands were becoming a hot commodity in Colombo's real estate market (Hettiarachchi et al 2017).

With this, a trend to "beautify the wetlands" also commenced, where marshes were converted into manicured urban parks with lakes and walking tracks. The beautification trend was later extended to lakes and wetlands outside Colombo. These facilities indeed provided much-needed recreational services welcomed by the urban upper-middle class. However, they were contested by environmental groups as changing the character of wetlands and in some cases tampering with heritage values (Dissanayake 2021).

Beyond 2000, the rural wetlands also could not escape the juggernaut of "development." The main threat for rural wetlands was infrastructure, rather than real estate projects. New expressways were urgently demanded by the tourism and export sectors. However, the main hurdle was acquiring the large extent of land required. Thus the routes were planned through paths of least social resistance, and lowest land value – marshes and paddy lands. The first major Expressway completed in 2014 between Colombo and Galle has nearly half of its course through wetlands (including paddy lands).

In 2009 the 30-year civil war ended in victory for the Sri Lankan government. Mired in an acute economic crisis, the government launched an aggressive campaign to boost investments and growth (Perera 2014). The 2010–2020 marked unprecedented growth in the infrastructure and real estate sectors. More than 250 km of expressways were added to the road network and condominium building floor space grew by 36% annually. In addition to direct conversion, this new phase of construction growth had an additional impact on wetlands in terms of building material extraction, such as sand and clay mining in rivers and flood plains.

Certain institutional and regulatory adjustments were required to realise these policies for the acquisition and privatisation of wetlands. Wetland acquisition was done under the existing Land Acquisition Act (1950) and was often transferred to the Urban Development Authority (UDA) and SLLDC. Both UDA and SLLDC Acts were amended multiple times after the 1980s to strengthen the authority of these agencies. Between 2010 and 2015, the portfolio of Urban Development was taken under the Defence Ministry, and land acquisitions and eviction of communities came under military oversight. This was a manifestation of a broader militarisation of social life during this period (Amarasuriya and Spencer 2015).

The limited protection provided against converting paddy lands for other land uses by the Agrarian Services Act was toothless against powerful development sector agencies. In 2015 a new Ministry (Megapolis and Western Development) was established to coordinate and regulate a faster urban expansion in the Western Province. The Megapolis Western Region Master Plan (2016) envisioned an array of new urban centres and infrastructure projects, with a narrow focus on positioning Colombo as a financial trading hub for South Asia (Ruwanpura, Brown and Chan 2020), which will further deepen the impacts on Western coast wetlands in the years to come.

However, the post-1980 period also marked significant developments in environmental management policy. Before 1980 wetlands had no exclusive protection, and only the wetlands declared as Protected Areas under the Fauna and Flora Protection Ordinance (1937) had any conservation status. However, some post-1980 environmental policies and institutions, such as the NEA of 1980 directly addressed wetland-related issues. NEA introduced numerous provisions for pollution prevention and protection of sensitive ecosystems including wetlands. For example, the Environmental Impact Assessment (EIA) provisions required any development activity involving "reclamation of land, wetland area exceeding four hectares" be approved through an EIA process. NEA also vested the Central Environmental Authority with powers to declare sensitive

ecosystems as Environmental Protection Areas (EPAs). CEA did declare numerous wetlands along the Western coast as EPAs, using this provision. The Department of Coast Conservation and Coastal Resource Management was established in 1981 with a special mandate to protect the coastal systems, including estuarine wetlands.

In 2005, a National Wetland Policy (MoE and CEA 2006) was formulated by the CEA. The SLLDC established its own Wetlands Management Unit (WMU) in 2015. Both CEA and WMU commenced wetlands awareness programmes at school, community, and corporate levels. February 4 wetland day celebrations have now become a routine state affair. WMU also secured two urban wetland conservation parks with a wetland education centre, where certain characteristics of the marsh such as native species were restored. In 2016 the Ministry of Urban Development along with SLLDC prepared an exclusive Strategy for Management of Colombo Wetlands (GoSL 2016), with World Bank Funding. In recognition of these positive developments, Colombo was accredited as a "Wetland City" by the Convention on Wetlands in 2019.

Governance of wetlands beyond 1980 clearly had two trajectories. On the one hand, the Development Sector was well and truly at war with wetlands. The colonial vision of taming and sanitising the wetlands took on a new and far more virulent form during this period. On the other, there was a formal expansion of environmental policy, laws, and institutions, which also had specific implications for wetland management. The real outcomes of these two governance trajectories can only be assessed by the impacts they produced on the ground for wetland ecosystems and communities.

Disturbed Ecosystems: Degradation and Ecological Transformation

The policy turn after 1980 to subserviate the wetlands to development projects and market forces brought unprecedented ecological consequences. Arguably the wetlands, including coastal areas, were the most affected ecosystems in Sri Lanka during this period. Especially along the western coast, wetland conversion into non-wetland uses, hydraulic modification, and pollution triggered an overall ecological transformation which permanently changed the ecological character and ecosystem services of the wetlands.

Large extents of marshes along the western coast were converted to non-wetland uses during this period. Hettiarachchi et al (2014) studied a portion of marshes in the northern suburbs of Colombo and estimated that about 14% were filled and converted to non-wetland use between 1980 and 2008. Scattered studies and news reports show that similar trends of direct loss of wetlands are becoming commonplace throughout the country for all wetland types (Gunawardena et al 2015; Kaleel 2017; Amarasinghe 2019). Two of the recent and most alarming incidents were the destruction of 2 ha in a protected mangrove forest in the Kalpitiya peninsula, and the illegal clearing of part of the Anavilundawa wetland reserve (a Ramsar-designated wetland) in 2020, both by private developers under the patronage of local politicians. A newspaper content analysis done by this author revealed that 52% of all the newspaper reports (2010–2020) on wetlands were about loss or reduction of wetland extent.

Large-scale conversion of wetlands for public or private/public partnership development undertakings was indeed the major cause of wetland loss post-1980. However, the impact of gradual and incremental encroachment of wetlands by households is also an important cause. The aerial photographs below show the encroachment of a marsh area Kolonnawa (easter suburbs of Colombo) by informal settlements between 1980 and 2008, where the loss exceeded 80% (see Figure 21.1).

Hydraulic modification, fragmentation, and pollution also had major impacts on wetlands. Hettiarachchi et al (2014) showed how intense canal widening, deepening, and artificial bank

Figure 21.1 Encroachment of a marsh in the Kolonnawa area by informal settlements: (a) 1980 to (b) 2008 (Source: Survey Department of Sri Lanka)

stabilisation in Colombo's wetlands have severely modified the hydraulic patterns. Although not well documented, such hydraulic modifications were seen extensively in all western coast marshes. The hydrological impact of large-scale filling and modification of paddy lands and marshes for expressway projects are yet to be fathomed.

Pollution of wetlands by wastewater and solid waste also rapidly intensified in the post-1980 period. The main sources of pollution shifted from heavy industries, to non-point source pollution from service sector operations and urban expansion. The wetland site reports prepared by CEA (1994) in the 1990s identified the growing pollution issues due to urban sprawl along the western coast. Hettiarachchi, Anurangi and de Alwis (2011) showed the alarming state of water quality in the Colombo wetlands, where key pollution indicators, such as Biochemical Oxygen Demand (BOD), Ammonia, and Phosphate levels were 5–10 times higher than the stipulated ambient standards for healthy aquatic life. The Colombo Wetland Strategy Report (2016) revealed severe nutrient accumulation in water and soils, and Jayawardena et al (2017) demonstrated bioaccumulation of heavy metals in wetland fish.

When environmental pressures, such as habitat conversion, hydraulic modification, and pollution accumulate in a wetland ecosystem, it can be pushed from one ecological state to another. In most cases, these new states are not stable and are referred to as "hybrid ecosystems." Such "ecological transformation" was widespread in the marshes around Colombo, which rapidly transformed from grass-dominated marsh habitat to a shrub habitat with small trees (see Figure 21.2), often dominated by exotic invasive plant species such as *Anonna glabra.*

Wetland ecological transformation was not only limited to changes in vegetation and habitat. The transformation of Colombo's marshes entailed the full spectrum of ecosystem characteristics, such as soil characteristics, hydraulic patterns, water holding capacity, and faunal diversity. The reduction of water holding capacity severely compromised the flood regulation function of the wetlands and caused the rapid increase of flash flood incidents seen in recent times.

Hettiarachchi et al (2014) estimated that about 40–50% of Colombo's marshes transformed this way in the 1980–2010 period. No such quantitative assessments of ecological transformation

Figure 21.2 Transformation of freshwater marshes to shrub wetlands in the Kolonnawa Marsh: (a) marsh habitat and (b) shrub habitat

have been done on rural wetlands. However, a similar proliferation of invasive species has been widely recorded from all wetland types. The ecological impact of development policy on wetlands in this period was staggering, but the social costs were even more devastating with the additional dimension of social-environmental injustice.

Devastated Communities: Dispossession, Disasters, and Resistance

As in the case of ecological impacts, the social issues are also mostly well documented for urban rather than rural wetlands. Before 1980, it was the state-owned wetlands that were converted for public use, such as housing or common amenities. This character changed after 1980, and swaths of smallholder-owned wetlands were acquired in the name of "flood protection" and later transferred to government or corporate development projects.

In addition to such direct dispossession, the appropriation of wetlands also led to the complete elimination of the few remaining uses and livelihoods based on the wetlands such as fishing. By the mid-1990s, most of the wetlands around Colombo were cordoned off with a peripheral canal, which effectively barred public access. Hettiarachchi et al (2017) illustrated that this trend of appropriation of wetlands was akin to the "land grabbing" and "green grabbing" trends recorded from other countries of the Global South, where the land of the poor or marginalised was acquired and allocated for corporate needs.

In the urban areas, appropriation of wetlands for development projects also required mass eviction of the communities settled within or in the vicinity of them. Since colonial times, the wetlands around Colombo have been settled by marginalised peoples (i.e. the poor and caste or ethno-religious minorities). Such informal wetlands settlements exploded in the mid-1990s with Civil War migrants from the North and East. Some settlements were owned by local thugs affiliated with political parties and were rented out to poor families. Most of the settlers did not have legal titles for their lands or houses, in spite of paying taxes and utility bills for many years or decades. They were often loathed as "illegal encroachments" and "incubators of crime." By 2015 there were nearly 70,000 families under threat of eviction in different parts of Colombo (CPA 2014).

Most wetland communities not having defined property rights to their land made wetlands a preferred space for real estate and infrastructure expansion. They were far less contested than other lands with defendable legal titles. Evicting communities from canal banks and wetland peripheries were justified in the name of flood protection and wetland conservation (Dissanaike 1997). The well-being of the communities themselves was often cited as a reason, though most displaced families were either involuntarily relocated to multi-storey low-income housing schemes of poor quality, or given grossly inadequate monetary compensation (Gunasekara 2010; CPA 2014). Some have lived in ramshackle temporary shelters for many years in the hope of resettlement or compensation.

Ecological degradation of urban wetlands also increased the hazards faced by the communities in the vicinity. Floods and diseases are principal among them. A survey by this author in the peripheral areas around Colombo's wetlands (mainly Kolonnawa marsh) showed that between 2000 and 2008, 63% of the households within a 200-m buffer experienced disruptive floods each year. Major flash floods were recorded in 1985, 1989, 1990, 1992, 1994, 2002, 2004, 2005, 2006, 2007, 2008, and 2010, where 35% of households reported vector or waterborne diseases (2000–2008) that can be associated with the ecological transformation and pollution in the wetlands.

The kinds of deep environmental justice issues faced by wetland communities in urban areas of Sri Lanka are in accord with what is described in the environmental justice literature from other regions (Pulido 2000; White et al 2012). The marginalised wetland communities bear the brunt of disasters caused by wetland degradation on the one hand and on the other hand face forcible evictions to make way for the development projects invading the wetlands. Social issues faced by rural wetland communities are far less documented than urban ones. However, with the exponential increase in infrastructure projects and widespread appropriation of rural wetlands, similar reports of social injustice can be expected.

Injustice in the wetlands has not gone unresisted. Wetland acquisition for development projects has been contested both politically and legally by civil society and environmental groups. One successful instance was the Supreme Court ruling in 2008 annulling the transfer of 270 ha of wetlands by the UDA (Sugathapala vs Kumaratunga and others SC 2008) to a private company for the development of a golf course and an entertainment facility. A series of successful court cases by environmental groups against the conversion of wetlands along the Western coast in the early 2000s ultimately resulted in the drafting of the National Wetland Policy in 2005.

However, the most virulent resistance was seen against the forced evictions of settlements around the urban wetlands of Colombo. Fierce resistance was encountered during many attempts of the UDA to forcibly evict low-income communities in the Wanthamulla, Thotalanga, and Meethotamulla areas of Colombo 2010–2019. These protests flared mostly spontaneously and from the downtrodden layers of the community. Sporadic support from political parties was often opportunistic and not sustained. The forms of resistance included demonstrations, sit-ins, and heckling of government officials and politicians. They were always met with violent state repression (Nagaraj 2016).

Conclusions: Wetlands at Crossroads – Towards Resilience, Resistance, or Disaster?

The current state of Sri Lanka's wetlands is best described by the words of the Indian wetlands researcher Shrestha Banerjee (2009):

> wetlands have become sites where the interests of the economy and ecology, authoritarianism and democratic participation, global forces and local communities, meet and clash
>
> *(2009: 194)*

Since colonial times, the net outcome of public policy had been adversarial towards wetlands in Sri Lanka. Assaults on wetlands rapidly intensified after 1980 with the adoption of free-market economic policies. Formerly state-led wetland reclamation projects for urban expansion took a corporate character during this period. They directly served profit interests and were similar to other cases of mass land appropriation in the Global South, now commonly termed "land grabbing" or "green grabbing." This led to disastrous outcomes both ecologically and socially and produced acute environmental injustice.

Development policy wielded a frontal attack, first on urban wetlands, and now rapidly expanding to rural wetlands. The expansion of environmental policy and institutions after 1980, which included formal advancements in wetland management institutions, has clearly failed to curtail or reverse these impacts. Projects to "beautify" wetlands and provide recreational services have served certain sections of society but did not preserve the complex ecological processes or diverse eco-social interactions of the wetlands in any meaningful way.

However, the projects to tame and amend the wetlands (especially urban wetlands) for development purposes have not fully succeeded. Ecologically, wetland conversion and degradation have produced hybrid ecosystems, never predicted or desired by development actors. Flooding has become a much more frequent and untenable problem, severely undermining urban disaster resilience. Socially, the efforts to appropriate wetlands for corporate needs have met with intense resistance from civil society organisations via non-violent legalistic and the communities via peaceful protests and at other times violent forms.

As in the case of many other complex environmental problems, the example of Sri Lanka's wetlands shows that the protection of ecosystems cannot be attained only through normative policy declarations or regulatory provisions. Environmental policy cannot always be reconciled with development policy. Where there are actors with competing interests, gains for some come at the expense of others. Cutting back on corporate and development aspirations through democratic political struggle and social movements becomes necessary for the broader well-being of eco-social systems.

Therefore, all who are concerned about ecological integrity, resilience, and social justice in the wetlands should strive to build alliances of environmental policy advocates, experts, civil society, and communities to overcome the pressures of development policy. Environmental policy advocates can gain the necessary political clout from civil society activism and community struggles, while communities and activists can organise into broader and effective social movements with the guidance of experts and policy advocates.

The advancements in wetland science and management, in the past decades, are indeed remarkable. However, rather than being imposed from above as normative policy directives or regulations, they should be used as guidance for a participatory wetland governance, inclusive of diverse stakeholders, and adaptive to the inherent complexity of wetland ecosystems and their human users.

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Note

1 "…areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six meters." The Convention on Wetlands, Article 1.1 (UNESCO 1971).

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