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LANDSCAPE STRATEGY FOR BUILDING SOCIAL, ECONOMIC, AND ECOLOGICAL RESILIENCE

SGP OPERATIONAL PHASE 07 – SRI LANKA 2023

COMMUNITY BASED SUSTAINABLE MANAGEMENT OF COLOMBO WETLANDS, SRI LANKA



OPERATIONAL PHASE 7 OF THE GLOBAL ENVIRONMENT FACILITY/SMALL GRANTS PROGRAMME IN SRI LANKA (GEF/SGP – OP VII)

UPDATING THE BASELINE AND LANDSCAPE STRATEGIES AND CAPACITY BUILDING OF CSOs/CBOs

LANDSCAPE STRATEGY FOR BUILDING SOCIAL, ECONOMIC, AND ECOLOGICAL RESILIENCE

COLOMBO WETLANDS REGION, SRI LANKA MARCH, 2023



Acknowledgements

The Colombo Wetlands Team of the Department of Environmental Technology, Faculty of Technology, University of Colombo expresses heartfelt gratitude to all stakeholders, particularly the community, who actively and enthusiastically participated in the Colombo Wetlands study with unreserved and extensive engagement, making significant contributions to the study's successful completion.

Our heartfelt gratitude goes to the Global Environmental Facility/Small Grants Program of the United Nations Development Program, Sri Lanka, for initiating and funding a critical national issue of protecting Sri Lanka's critically endangered wetlands, as well as the trust placed in our team to conduct the Landscape Baseline Assessment of Colombo Wetlands study. We also express our appreciation for the substantial assistance provided, including technical training and other logistical assistance to finish the assignment effectively.

Finally, we would like to express our appreciation for the assistance and services provided by the academic and non-academic staff of the University of Colombo in carrying out various activities pertaining to preparation of this report.

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1. Background

The Colombo landscape is important particularly since Colombo serves as the commercial and administrative hub of Sri Lanka. The Colombo landscape encompasses a diverse range of natural and heavily modified habitats. Given the fact that Colombo landscape is located in the flood plain of Kelani river, wetlands are the most prominent natural land use type present. These wetlands exist in a densely urban, peri-urban, and rural environments and are estimated to cover approximately 2,000 ha (6% of the total land area of the Colombo Landscape considered), are a critical component of the region's ecosystem, providing vital services such as water purification, flood control, carbon sequestration, and habitat for a wide range of biodiversity.

It is therefore essential to prioritize their conservation and sustainable use to ensure the long-term resilience of the region's ecosystems and communities in the face of environmental challenges such as climate change. Colombo, like many other coastal wetlands depends on wetlands for flood control and storm water management. City of Colombo has been accredited as one of the 18 Ramsar Cities of the world in 2018 in recognition actions taken to conserve wetland ecosystems in Colombo city towards a sustainable urbanization concept. At present Colombo is the only capital city and only city in South Asia accredited as a Ramsar Wetland City.

Therefore, GEF Small Grants Programme's sixth operational phase in 2017 has selected Colombo as one of the three landscapes for investment on civil society driven projects. UNDP has commissioned a team of consultants from University of Colombo to conduct a baseline assessment of the landscape as well as to develop a landscape strategy for Colombo. Based on the positive outcomes of the SGP sixth operational phase, UNDP has taken a decision to reinvest on the Colombo landscape during the seventh operational phase as well. Thus, UNDP has commissioned the same team of consultants from University of Colombo to update the baseline as well as the landscape strategy. This report presents the updated landscape strategy for building social, economic and ecological resilience in the Colombo Landscape.



2. Methodology for updating the Colombo Wetlands landscape strategy.

The COMDEKS Resilience Indicators Toolkit was used to update the landscape strategy for the seventh operational phase 2023. It was the same toolkit that was used during the GEF Small Grants Program Phase 6 in 2017, to develop the Colombo Wetlands landscape strategy. The use of the same toolkit enabled the consistency of the data analyses and the comparative assessment of any change over the 2017-2023 period.

The Colombo University team's functional landscape boundary for the Colombo Wetlands, developed for the GEF Small Grants Programme's sixth operational phase in 2017, has been selected for use in the seventh operational phase in 2023.

2.1. Delineation of the Functional Boundary- OP6

To define the study area boundary for the Colombo Wetlands, a systematic ecological approach was used instead of relying on administrative boundaries. This decision was made because the different key stakeholder government agencies used different boundary demarcations. As a result, the study was based on a functional boundary definition that considered several factors.

The functional boundary definition took into account the Kelani River Left Bank, Lower Sub Basin, stream flow direction, operating and abandoned paddy lands, flowing water bodies, standing water bodies, and marshes. Additionally, the study considered the population density distribution pattern and spatial distribution pattern of identified wetland types to delineate the landscape baseline perception.

Finally, the Grama Niladhari Divisions, which had the highest level of wetland coverage, were selected while paying attention to the vulnerability level of the wetlands. Overall, by using a systematic ecological approach instead of administrative boundaries, the study was able to define a functional boundary that more accurately captured the unique features and characteristics of the Colombo Wetlands.

2.2. Justification for selecting same landscape boundary

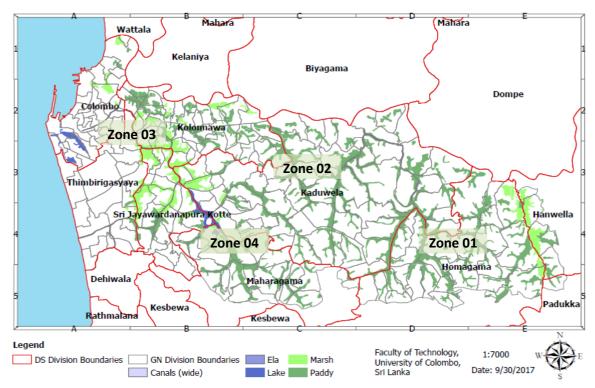
The decision to adopt the same landscape boundary was based on two critical criteria.

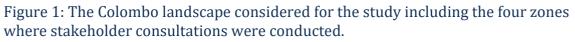
• Firstly, the boundary delineation in Phase 6 was meticulously executed, taking into account all relevant factors such as the administrative boundaries of relevant line agencies, the various aspects of ecosystem services, the mutual benefits to the



community, and the environmental share of the wetlands in the region under consideration.

• Secondly, comparing the landscape performance for the two stages was deemed necessary to upgrade the baseline report and landscape strategy.





2.3. Community resilience assessment workshops

The current study, namely 2023 assessment, was carried focusing on the same four zones used for the 2017 assessment, viz, Homagama; Kaduwela; Kolonnawa; and Maharagama-Kotte (figure 1). The Toolkit was modified to reflect the local contexts of the four regions. Four Community resilience assessment workshops, one in each identified zone, were held. (Refer Table 1). Each of these workshops was conducted with the participation of only the community in each designated region. The participants of the 2017 workshops, in comparison, included a sizable proportion of Grama Nildharis and Agricultural officers who operate at community levels. However, it was decided that the assessment in 2023 should give a greater emphasis for the community perceptions and their understanding of the nexus between the wetlands and their life and livelihoods. Therefore, only community members were consulted. Further, compared to 2017 assessment an effort was made to ensure equal representation of gender at the consultation workshops. Further, a field visit was conducted to 10 selected locations that were highlighted at the community workshops for the purpose



of field verification of issues identified by the community members. Finally, a comprehensive literature review was carried out, including aspects that were elicited at the community workshops. Data collected through these multiple modes were used for the updating of the baseline data and landscape strategy.

Table 1:Community Resilient Assessment Workshop Series, Colombo Wetlands

	Venue	Date	Number of participants		
Landscape zone			Total (count)	Male (%)	Female (%)
Homagama Region	''Perumpuri'' Community Hall, Walawwa Road, Homagama	26/01/2023	22	36	64
Kaduwela Region	Agrarian Services Centre, Malambe	16/02/2023	24	83	17
Kolonnawa Region	Agrarian Services Centre, Kolonnawa	31/01/2023	35	34	66
Maharagama-Agrarian Services Centre,Kotte RegionKotte		02/02/2023	30	33	67
Overall participation			111	45	55

2.4. Community Participation for the Workshops

A total of 103 persons participated in the workshop series held in 2017 (OP 6) in which 73% were males. Thus, in 2023 (OP 7) a special attempt was made to increase female representation. Accordingly, in 2023, the participants included 55 % females and 45 % males, ensuring near equal representation from both genders (Figure 2)

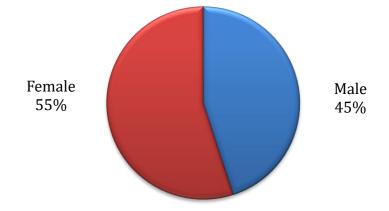


Figure 2: Gender representation in the stakeholder groups.



It must be noted that the two groups of participants in the workshops held in 2017 and 2023 are not directly comparable. In 2017 participants included administrative officials, representatives from community-based organizations (CBOs) and residents, whereas in 2023 almost the entire group comprised residents (members from the community). This disparity itself might result in some differences in perspectives apart from temporal changes that might have occurred. Nonetheless, comparisons have been made to allow identification of key changes which might be useful for formulating future community-based management strategies in the area of interest.

In 2023 the majority of those that participated from the community were engaged in farming and would therefore play a vital role in maintaining the integrity of the Colombo wetlands. Around 27% of the participants were housewives who engaged in home gardening. This might have been driven by the challenges imposed on the community due to Covid -19, when people were confined to their homes. Figure 3 illustrates the overall representation of the livelihood practices of the participants in 2023.

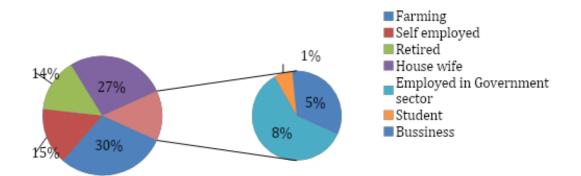


Figure 3:Livelihood representation in the stakeholder group.

2.5. Format followed for the workshop.

The format of the Colombo Wetlands Resilience Assessment Community Workshops was designed to capture the diverse aspects of each zone in a standard style. The workshop started with the introduction of the team of consultants followed by a self-introduction of the participants. Then an overview of the Colombo landscape and expectations from the workshop was explained to the participants. This was followed by an explanation of the COMDECKS tool kit as well as the ground rules of the workshop. Then the 20 questions of the tool kit were presented to the participants one at a time and their responses were recorded. After presenting 10 questions, a short break was taken during which the participants were



asked to identify any significant event that has taken place in their region that has an influence on the wetlands or their livelihoods and to identify the time at which this event has taken place and identify the location(s) affected by this event on a map. The agenda used for the workshops is shown in Table 2.

Table 2:Agenda of the workshops

N	Time		.
No.	From	То	Item
01	8.30	9.00am	Degistration of the Dartisinants & Defrechments
01	am	9.00411	Registration of the Participants & Refreshments
Inau	guration of th	e Program	
02	9.00am	9.05am	Welcome and Team Introduction
02	9.00am	9.05am	Prof. Ranjana Piyadasa
02	0.05 am	0.10am	Program Introduction
05	03 9.05am 9.10am		Prof. Devaka Weerakoon
04	9.10am	9.15am	Ground Rules & Toolkit Introduction
04	9.10am	9.15am	Ms. Wasana Withana
Stak	Stakeholder Consultation Forum		
05	9.15am	10.15am	Discussion- Phase 01(Question 1-10)
06	10.15am	10.45am	Community Engaged Exercises
07	10.45am	11.45am	Discussion- Phase 02(Question 10-20)
08	11.45am	11.55am	Getting Feedback from Participants
00	11 550	12.00	Vote of Thanks & Closing Remarks
09	11.55am	12.00pm	Prof. Ranjana Piyadasa

2.6. Method of Analysis

Analysis of the data gathered through the four workshops held in 2023 were carried out to identify potential challenges that would hinder the sustainable management of the wetland landscape in Colombo. The findings of the analyses were interpreted following a thorough assessment of the literature on the dynamic environmental, socioeconomic, and physical context of the Colombo Wetlands. The wetlands were viewed as a Socio-Economic Production Landscape. The analysis integrated the following methods covering the period 2017 to 2023, the period between GEF SGP Operational Phases Six and Seven.



Table 3:Methods of Analysis

Exercise	Method
1. Community Mapping	Contextual Overlay Analysis: Consider common pattern
2. Timeline of events (preparation of the History Line)	Critical Life Event Pattern Analysis (CEP)
3. Scoring on 20 Questions (Indicators) used for workshops	Socio Economic Production Landscape Indicator Data Capture Tool; Trend Analyses using MS Excel

3. Landscape performance of Colombo Wetlands

In this section a comparison between the findings of the present survey and the findings of the survey conducted in 2017 is presented. However, it should be noted that this is a general comparison to establish the overall trends in the landscape and no specific conclusions should be drawn due to the following reasons.

- 1. The sample size of the community members consulted (n=111) is not large enough to extrapolate the findings to the entire landscape.
- 2. In order to make a meaningful comparison of change over time the same group of people must be consulted. However, in this case the two groups consulted comprised of different persons drawn from the same region
- 3. The composition of the group consulted in 2017 included local government officers and had a bias towards male representation, whereas the group consulted in 2023 comprised of community members only and had a near equal representation of gender.

Compared to 2017 the overall ratings received in 2023 showed a slight improvement in 4 out of the five aspects considered and a moderate improvement with respect to the knowledge and innovation (figure 4).



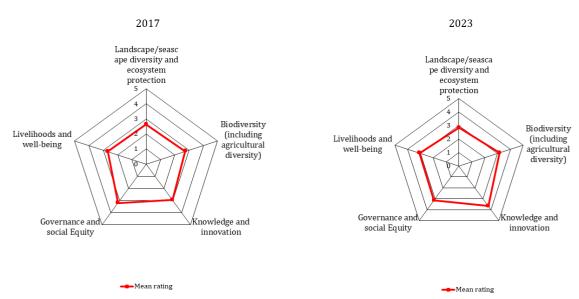


Figure 4: Comparison of overall Colombo wetland landscape performance between 2017 and 2023.

This could have resulted due to increased efforts taken by state and no-state agencies to create awareness about the wetland during the past few years after city of Colombo has been accredited as Ramsar wetland city.

The overall perspectives of the participants in the workshops held in 2023 regarding the current trends with respect to the 20 questions presented is captured in Figure 5. Different colors in the figure depict the scores given for the responses while the upward and downward trends in indicators are given by the height / depth. It is evident that the overall perspectives have substantially changed from 2017 to 2023. In 2017, majority of the indicators depicted a score of 1.0-2.0. In 2023, majority of the scores were 2-0-3.0 indicating no change. However, compared to 2017 there were many responses above 3.0. This suggests that the community appear to be content with the diversity and management of the wetland landscape, which is an improvement from the situation in 2017. However, with respect to some indicators, the communities anticipate a worsening of the situation in 2023 (downward trend) which were not apparent in 2017.



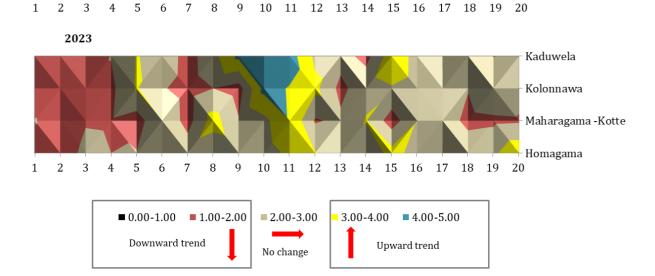


Figure 5:Comparison of overall trends indicated by participants between 2017 and 2023.

The temporal changes (2017 to 2023) in the perspectives of the participants may have been driven by the factors given below.

- The increase in awareness programs conducted by state agencies as well as nongovernmental agencies that has resulted in the community gaining a better understanding of the diversity and importance of wetlands in the urban environment.
- An increase in the realization that the communities could play a greater role in contributing towards the wellbeing of the wetlands in their immediate environs.
- The disparity in perspectives of the two participatory groups in 2017 and 2023. The group in 2017 which included a considerable proportion of government officials whose opinions may differ from the community members as they may have a better understanding about the broader landscape, whereas the perspectives of the participants in 2023, dominated by local community members would portray experiences gained from their immediate vicinity.

Apart from the overall picture about the landscape, it is also important to compare the outcomes of the each of the four regions with respect to the different indicators that is presented below. It is interesting to note that some change was noted with respect to the situation in 2017 and 2023 in all of the four regions of interest - Homagama, Kaduwela,

Homagama



Kollonawa and Maharagama - Kotte, although the magnitude of the changes differed from one region to another.

In the Homagama region, the changes were substantial (figure 6). For example, the scores for knowledge and innovation increased from 3.0 in 2017 to around 4.0 in 2023. Likewise, the scores for the perspectives on landscape diversity and on biodiversity have improved from 2 to 3.5 and 2.5 to 3.0 respectively. Overall, it is evident that the current situation is much better indicating that the communities are more informed about the values of the wetland landscape and are more concerned about aspects of management of these ecosystems.

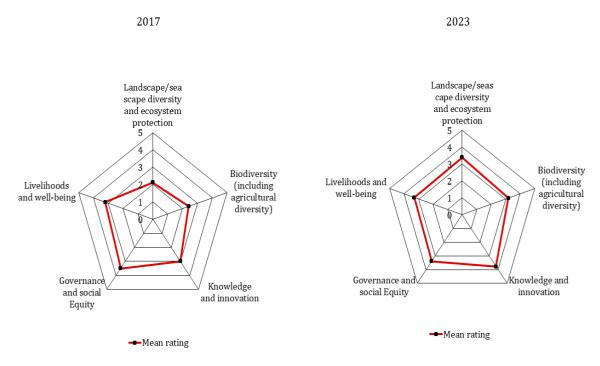


Figure 6:Homagama regional landscape performance

No drastic changes were noted with regard to the indicators in Kaduwela suggesting that the perspectives of the community remain more or less the same with a slight improvement being noted in 2023 for both governance and social equity and knowledge and innovation (figure 7). In this region also the community members consulted were more informed about the values of the wetland landscape and expressed a high concern about aspects of management of these ecosystems.

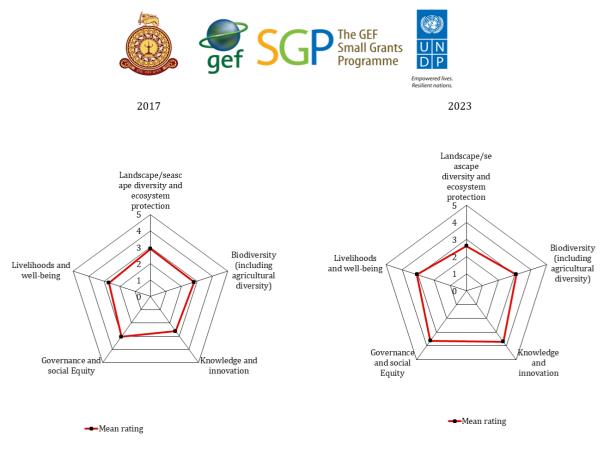


Figure 7:Kaduwela regional landscape performance

Considerable changes were also noted in Kollonnawa as indicated by the scores in 2017 and 2023 (figure 8). Perspectives on livelihood and wellbeing increased from 2.0 to 3.0, perspectives on knowledge and innovation and governance and social equity increased from 2.5 to 3.5. The other two aspects showed a slight improvement. This could be interpreted as a positive change in the perspectives of the community with regard to aspects of diversity and management of the wetland landscape.

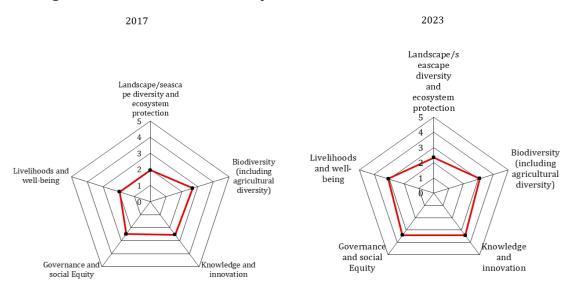


Figure 8:Kolonnawa regional landscape performance



Unlike the other three regions, in the Maharagama-Kotte region (figure 9), a noticeable negative change was observed with respect to governance and social equity (a reduction from 4.0 to 2.5). Likewise, a slight reduction was observed for livelihood and wellbeing. The other aspects showed a slight improvement with respect to 2017.

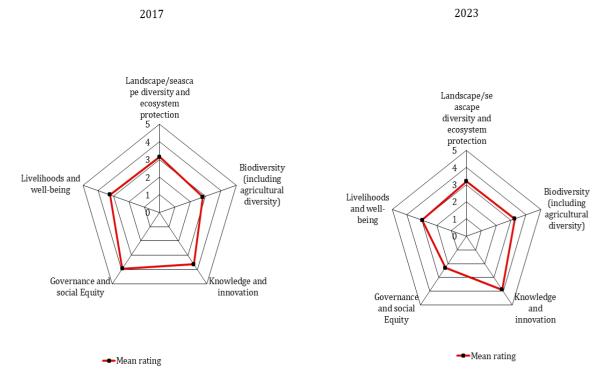


Figure 9:Maharagama-Kotte regional landscape performance

This result may have been influenced by the disparity in composition of the participants in the two years 2017 and 2023. In 2017 the officials responsible for implementing the management actions comprised a large component of the group. On the contrary, in 2023, there were no representation of government officers' and only the perspectives of the community were captured that reflected some dissatisfaction with the actions, or inaction's of the government and state institutions, which may have contributed to the observed change. This might also be reflective of the fact that in 2023 the residents, being more aware of the right to take action and voice their opinion, responded more openly.



4. Challenges & future trajectories; 2023 compared to 2017

Table 4:Challenges & future trajectories; 2023 compared to 2017

	Observations in 2017	Observations in 2023
1.	Inadequate or complete absence of coordination between line agencies (at both vertical and horizontal levels) and lack of communication between state officials and communities at the grassroot level created a fundamental gap in the manner in which each group perceives the use and management of wetlands, thus contributing to suboptimal and ineffective implementation of policies and regulations related to the ecosystem.	Despite that this limitation was recognized in 2017 and recommendations were made to address it, the situation in 2023 appear to have not changed, as per the community perspective. It is likely that these issues will not find adequate remedies and will persist due to inadequate funding and other national priorities with the ongoing economic crisis. Further, scaled down public spending, and the restrictions imposed in the aftermath of the COVID-19 pandemic may have also contributed to this aspect. The composite outcomes of such are that wetland issues will remain lower down in the government priorities potentially further aggravating issues that have turned critical already. Thus, the need for stronger and effective measures are once again recognized by this study. In the absence of central funding, alternative measures through community participation would be a practical and pragmatic way forward.
2.	The lack of a clear understanding about the importance of wetlands in terms of their biodiversity, use and sustainable management. There is ambiguity among the relevant agencies, private sector organizations and the community as to the purpose of protecting wetlands, the ecological and economic services they provide and how they should be managed. The designation of wetlands for protection based on their importance and vulnerability was also recognized as a need. The Establishment of an Independent	Knowledge enhancement was noted with respect to biodiversity, diversity of the landscape and the use of innovative practices d among the community. This might have resulted due to greater attention been paid to conserve the Colombo wetlands after it was accredited as a Ramsar City in 2018. This resulted in many awareness programs being conducted by state agencies and NGOs on wetlands and their importance to school children, the general public. The legal aspects with respect to Illegal landfilling and mismanagement was also more exposed in the light of this. Although it was



	Observations in 2017	Observations in 2023
	overning body was also recommended as critical necessity.	evident that political pressure has hampered efforts in punishing the wrong doers or preventing illegal activities. While progress has been achieved, there should
		be an ongoing effort to establish a clear and shared definition of wetlands and prioritize their management based on vulnerability. We could improve wetland management by addressing the identified drawbacks and leveraging the benefits and setting up channels through which the community would be able to raise concerns and also contribute towards their management.
an Pr un W en Sp in	he evidence is that the current, the past and the future proposed Development rojects, especially large-scale ones, inderestimate the Intangible value of determinate the Intangible value of determinate the Intangible value of determinate and their sensitivity to <i>ad hoc</i> invironmental alterations. A high risk to etlands was evidence from unplanned batial expansions with no regard for their trinsic connection to overall well-being of ecople.	The Implementation of infrastructure projects such as the Outer Circular Highway (OCH) had considerable impact on the wetlands that it intersects. For instance, a heavy infestation of the alien invasive plant species <i>Mimosa pigra</i> (Giant Mimosa) has been established after the construction of OCH near Kaduwela at a location referred to as Thunandahena. This is clearly due to an oversight in monitoring the construction site for establishment of alien invasive plants. It appears that little has been done to mitigate such impacts on wetlands and the surrounding livelihoods. It highlights the need to factor clear post project strategic measures at planning and funding stages of infrastructure projects to ensure wetlands are sustained.
		Another classic case is the elevated highway project which may have significant harmful impacts on wetlands, especially the Thalangama Environmental Protection Area. The revision of the permitted activities for the EPA to enable construction of the elevated highway indicates how such development projects influence the governance as line agencies are politically pressurized to take actions that are detrimental to wetlands. On the other hand, positive indicators were also observed during this



	Observations in 2017	Observations in 2023
		period where the JICA funded LRT project took extreme measures to consult stakeholders to minimize its impact on wetlands.
		These numerous scenarios demonstrate how difficult it may be to strike a balance between environmental conservation and economic growth, especially when it comes to wetlands. The management and conservation of wetlands must be given top priority despite occasionally conflicting interests in order to maintain their ecological and socioeconomic benefits. To create and put into action effective plans for safeguarding wetlands and their intrinsic worth. This calls for cooperation across numerous parties, including governments, NGOs, and the corporate sector.
4.	Lack of awareness of the value of small- scale wetland areas to the surrounding ecosystem, they are often being underestimated and neglected. For instance, such wetlands are commonly placed under the broad category of 'Abandoned Paddy Lands' and utilized for Development Activities that are unsuitable with the way of living and the environment (Example: 'Owita', 'Deniya'). Such practices lead to extreme negative impacts on the Quality of the Wetlands with highly adverse Social Impacts on the Communities in the region.	It's crucial to notice that there doesn't seem to be much of a change in the state of wetlands preservation between 2017 and 2023. While it is true that some paddy fields were used for agriculture during the COVID-19 epidemic, this was not sustained, and the fields were soon abandoned. This emphasizes the necessity of long-term planning and consistent efforts to manage and conserve wetland regions, which are essential to the general health of the ecosystem and the welfare of nearby communities. During the field investigations it was observed that wetlands continue to be encroached, especially in the highly urbanized regions of the landscape (e.g. Kaduwela, Kolonnawa etc,) which will have a negative impact on the services provided by these wetlands, especially flood retention, which is one of the critical services it provides in highly urbanized areas.
5.	The common practice of treating 'Wetlands as Wastelands' and also the community belief that waste and wastewater could be discharged to such locations. Due to poor supervision by authorities, often industries	Garbage disposal into wetlands is still a problem because there aren't enough solid waste disposal or processing facilities within the landscape. Further, domestic waste is also frequently dumped in surrounding paddy fields.



	Observations in 2017	Observations in 2023
	release solid waste and wastewater to the wetlands without proper treatment. Until the issue reaches critical proportions even the local communities seem to remain	Regrettably, it looks that things have gotten worse over time, emphasizing the pressing need for action.
	oblivious to such practices or they themselves indulge in them.	The authorities must consider new, creative solutions that may efficiently manage solid waste and stop additional harm to wetlands and other natural resources in order to address this problem. They must look beyond the rigid and conventional frameworks. One of the key considerations should be to reduce waste generation at source by providing alternate pathways for people to convert their solid waste in to useful products such as compost that can also be combined with promoting urban agriculture with a heavy emphasis on organic fertilizer which would allow citizens to produce their own vegetables in urban areas without heavy use of agrochemicals. However, a lot of issues need to be resolved, such as changing rainfall patterns, unlawful landfilling, inadequate drainage systems, and the unpredictable nature of rainfall brought on by climate change. Consequently, it is crucial that any suggested solutions consider these aspects and are created to treat the issue's fundamental causes in a thorough and long-
		lasting manner.
6.	The inability of relevant Line Agencies to exploit the Traditional Knowledge (TK) available at grass root level with regard to wetlands, and related economic activities and responsible environmental management practices demand immediate attention. Clear need exists for practical and real ground collaborations for blending local and community traditional knowledge and practices with Modern Technological Inputs will yield considerable synergies There has been evidence of serious gaps between technological advises provided by	With the use of YouTube as a platform for sharing and promoting ecologically sustainable agricultural techniques, a project supported by the GEF-SGP-6 has demonstrated positively how traditional knowledge can be used to improve agricultural productivity. The project has made it possible to spread information and skills to a larger audience by utilizing the power of contemporary technology, including younger generations who might not have otherwise been connected to ancient practices. Through increasing relationships between various generations and communities, this has the



	Observations in 2017	Observations in 2023
	experts and the connected state incentives and the practices and expectations of the community. For instance, cultivation of traditional paddy varieties verses those supported by state agencies and also banks are a common issue encountered by the farmer community in the region.	potential to not only support sustainable agriculture but also cultural heritage preservation and social cohesion. The research has shown how traditional knowledge can be modified and combined with cutting-edge techniques and technologies to produce a more productive and successful agricultural system that is also sustainable. This has significant ramifications for agriculture's future, particularly in light of the obstacles posed by climate change, environmental degradation, and worries about food security.
7.	Unavailability of an appropriate mechanism or a proper system for documentation of the available wetlands related traditional knowledge and disseminating that knowledge to the Future Generations was a concern expressed by the community. They feared that such knowledge will be lost forever after the current generation unless a knowledge repository of some form is established.	The participants who came to the workshops were of the view that the younger generations are still exposed to traditional knowledge which was more evident among the suburban communities when compared to urban communities where the youth are less interested in the old ways. Therefore, there is room during this cycle to address this aspect further including the establishment of a repository to preserve traditional knowledge through one of the projects.
8.	Existence of multiple malfunctioning issues when providing support for farmers at grass-root level, especially those farmers who are engaged in Traditional Agricultural Practices and cultivating Local Varieties that blends with the Wetland Ecosystems Management. These deficiencies lead to discouragement of the Farmers who practice Traditional Sustainable Agriculture thereby weakening the frontiers of local wetlands.	Rather than simply giving incentives, a better way to support urban farmers would be to build marketplaces for their products. This can be accomplished by experimenting with organic and traditional farming methods. To modernize their approach, agricultural officials must be informed and instructed on the most recent agricultural methods. Furthermore, the establishment of advance contracts can offer farmers with stability and predictability, while community property rights can increase their sense of security and ownership over their land.
9.	Despite that Rules and Regulations for the protection and sustainable management of natural and common recourses related to the wetlands, lack of/ poor administration	There isn't much of a difference. There is a new trend of small-scale home gardening in individual houses, particularly those who cultivate on rooftops with limited space. This



Observations in 2017	Observations in 2023
have created a deep descent and a feeling of hopelessness among the local communities. Those who are powerful and politically connected are said to exploit the resources at serious cost to the community.	factor can be used to investigate whether traditional farming practices can be encouraged on such rooftops and other urban spaces. In comparison to 2017, there have been some advances in the promotion and consumption of local foods in this landscape's community. It can also be investigated as a potential solution to a future food crisis (For example, local food campaigns).
10. The need for identification of the potential of Local Food Varieties could be turned into viable economic opportunities that could enhance the livelihood of the communities. A systematic market-based approach on popularization of such economic activities will enhance the livelihood of local communities and to encourage them to live in their traditional neighborhoods thereby providing an indirect natural protection for the wetlands themselves.	Since 2017, it appears that the situation has become even more dire, as farmers who took part in workshops have voiced their concern that the future generation's agricultural methods may be substantially less advanced than those of the current generation. It has been noted that members of the younger generation have a greater propensity to avoid pursuing agriculture as a means of making a living. On the other hand, there is a growing movement toward retired people participating in agricultural activities as a means of generating income. This underscores how urgent it is to promote techniques that are sustainable for agriculture and create possibilities to attract younger people to work in the agricultural sector.
11. Outward migration of traditional communities and inward distribution of communities from outside causes social imbalances leading to stress on sustainable living and wetland protection. Also, that younger generations emerge increasingly alien to traditional practices and related wetland-based living. These changes are manifested by prevalent labor shortages with regard to wetlands related economic activities. Concerns vividly expressed by farming communities were amongst such issues raised.	This problem cannot be avoided because of the location of the city that serves as the nation's capital, and it is only going to get more severe in the years to come unless it is strategically addressed. It will be possible to alleviate some of the issues if steps are taken to integrate newcomers and members of the younger generation into society and make them feel more at home there.



Observations in 2017	Observations in 2023
12. There appears to exist a considerable gap between Non-Government Organizations and Community Based Organizations and the community at large. Especially, issues and queries on accountability and trustworthiness with regard to the setout purposes and deliverables. In particular, concerns were expressed that considerable number of projects have not achieved the claimed deliverables or never met the goals set out as "benefiting the communities".	Accountability to the community is an essential component of any intervention that uses funds that were set aside specifically for the purpose of community improvement. GEF SGP has taken some steps towards holding events to create awareness about the contributions of the funded projects. However, it is recommended that such events are increased and taken down to the grass root level to showcase how civil society can engage in sustainable management of wetlands.
	 In addition to these issues two new issues were identified during the stakeholder consultation carried out in 2023 which were also verified during the field investigations carried out by the team of consultants. These include A growing issue in the Athurugiriya area due to expansion of feral population of spotted deer (<i>Axis axis</i>). These deer has been released from a captive population and have become established in the area. Despite attempts by Department of Wildlife Conservation to translocate these deer from time to time the problem continues to persist as they reproduce rapidly due to availability of food. This is causing a serious concern for local communities as these deer tend to come to home gardens and feed on crops creating a conflict. Thus, a more permanent solution is needed for this issue. Spread of alien invasive species continue to occur in the landscape. Between 2017 and now a new addition (Giant mimosa) has been recorded. According to local communities consulted during the workshop and field investigations this plant has been established after the construction of outer circular highway. Thus this implies a clear failure in post construction monitoring of the project which should have identified and address this issue. At present the plant has spread over a large area but can be managed



Observations in 2017	Observations in 2023
	if steps are taken immediately. The local communities indicated that this plant is posing a serious threat to them and their livelihoods.

5. The Updated Landscape Strategy for Colombo Wetlands

5.1. General Premise

The Landscape Approach grounded on Satoyama Initiative provides the basic foundation on increasing the resilient capacity of the "societies in harmony with nature". Being on this premise as the fundamental value, Colombo Wetlands Baseline assessment focused on addressing the identified key challenges in the landscape presented in the previous section via community based and participatory approaches and thereby bring about sustainable management of the socio-ecological production landscapes in Colombo wetlands.

5.2. The Goal

Initiating a Landscape Level Approach on Networking all relevant Stakeholders into Community Based Sustainable Management of Colombo Wetlands.



5.3. The Objectives

To Facilitate Enhancement of the Socio-economic Production Landscape Performance of Colombo Wetlands based on the key priority aspects of,

- 1. Landscape/ Seascape diversity & ecosystem Protection
- 2. Biodiversity (Including Agricultural Biodiversity)
- 3. Knowledge & Innovation
- 4. Governance & Social Equity
- 5. Livelihoods & Well-being

Colombo Wetlands region can be considered as one of the most complex mosaic landscapes in the country. In achieving the prospecting Goal and the Objectives it required higher attention from every scale in order to address these challenges in an effective manner.

'Business as Usual' attitude of all scales needs to be changed extensively in order to initiate the progressive Sustainable Management of Colombo Wetlands.



5.4. Typology of potential community-based projects and criteria for project selection

Outcome Indicators of Possible Typology Interventions 1. Enhance community / stakeholder 1. To improve 1.1. Number of functional and/or kev stake / school level awareness through voluntarv sharing of available information, maintain holder advocacy bodies/groups formed in research on wetland issues. ecosystem each zone importance and to be proactive services bv 1.2. 2. Identification, Documentation and Number of voluntary strengthening community membership, action for the removal of physical participatory with gender breakdown, community land use barriers Increase in each GS division and who planning accessibility. especially Number of wetland wetland-based management 1.3. engage in agriculture livelihoods, into the practices. preservation awareness programs held at school wetland Agriculture areas. level by the advocacy 3. For any changes made to the groups in each zone existing landscape, practice through Number of workshops community-based, 1.4. held by professional participatory decision-making including and monitoring. groups, 4. Introduce a wetland community research and university community to inform of rewarding / recognition system for the preservation of the detailed/ ongoing wetlands- at community level & research findings 1.5. Number school level in each zone of events organized for wetland 5. Promote idea generation process community recognition/ for wetland protection at school rewards and level of level. Hold competitions where community participation school gathers each ideas/ 1.6. Number competitions proposals from students that held by schools and pertain to their own living neighborhoods. These proposals number of students participated are linked with the repository of 1.7. Tracking wetland extent knowledge and information, and quality of wetlands 6. Promoting CSR as a vehicle to generate funding support from through independent monitoring the industrial community 7. Promote public discourse of protection wetland and sustainable exploitation as a social theme amongst school goers and youth thus extending

Table 5:Expected outcomes, indicators and typology of projects





Outcome	Indicators	Resilient nations. Typology of Possible		
Outcome	Indicators	J F - 8J		
	2.5. Number of	Interventions		
	2.5. Number of publications in the form	interested parties, especially		
	of leaflets on traditional	school goers and youth. This could		
		promote wetland protection across generations.		
	agricultural practices,			
	their modern	4. Encourage applied Research to		
	compatibility within	analyze the compatibility of		
	wetland zones	traditional Practices and		
	2.6. Number of farmers	contemporary / modern		
	engaged in traditional,	technological inputs related to		
	wetland friendly	agriculture and wetland		
	agriculture (with	management.		
	breakdown of each	5. Promote the cultivation of		
	category)	traditional paddy varieties that		
	2.7. Volumes of the	provide as a viable crop that has		
	produce in 2.6 above	increasingly being popular as		
	2.8. Values of the incomes	economic practice that blends		
	generated to farmers in	with Colombo wetland areas		
	2.6	where small scale farming is a		
	2.9. New product varieties	common reality. In particular,		
	introduced	promoting official		
	2.10. Products loosing	acknowledgment of their		
	economic appeal	economic viability as a small-scale		
	2.11. Number and the nature	farming crop, thus extending		
	of the community	supporting services and also bank		
	engaged	financing without discrimination. 6. Promote traditional livestock		
		farming practices as through		
		adequate and unhindered access		
		to wetlands (ex: Buffalo dairy) so that traditional wetland-based		
<i>3.</i> To improve the	3.1. Number of new wetland	livelihoods are preserved. 1. Identification of Local Food		
livelihoods of	based non-farming	Varieties that could be		
the people	livelihood activities	sustainably promoted as a		
through eco-	introduced and	livelihood occupation. There have		
friendly	supported by NGOS, CBOs	been traditional food varieties		
community-	and the ongoing progress	that have been successfully sold in		
based	of each such item	the past but now faces decline.		
enterprises that	3.2. Bi-annual tracking of the	Also, wetland- related foods can		
reduce impacts	non-farming livelihood	be promoted amongst the local		
on the	activities discontinued in	communities to create a readily		
ecosystem and	each GS division and	available market. Also, promote		
scenic value of	underlying reasons,	healthy living among the		
the landscape.	where possible.	community, especially among		
ine ianuscape.	where possible.	Page 23		

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		-	0	
Outcome	Indicators	Typology	of	Possible
	 3.3. Number of nano/micro level non-farming activities, including production scale of local food varieties by the community 3.4. Periodic tracking of the number of households engaged in wetland based economic activities as family income support through self-sufficiency 3.5. Number of Grassroots level links/ networking between micro producers and super markets 3.6. Number of retail outlets- wetland centers established to exclusively market wetland products 3.7. Extent of lands that were in disuse converted into wetland based ago/ dairy farming 3.8. Number of household compost units established 3.9. Number of compost/ biogas units created 3.10. Tracking expansion of new industries that could harm the wetlands unless proper management practices are in place. 	Interventionsyouthwhoindulgeinhabits.2.2.Establish farwould providebetween farThiswillexploitationremaindisuproduction.generateopportunitieoutsidefarprovideseconomicwhoowncouldproviwetlandpeconomicmaproductspartnershipFarmer-Marlnetwork whsustainingsrun.4.EmpoweranSuchpractiprovideasmechanismgarbagegarbagegentherebyvodisposedto6.Creatfarmer/prodthenlinksupermarketoutlets.Such	are inappro- mer network de an act ners and enable of we used, for While s to with ning com onomic va ands. Th de an i protection anagemen urketable via pu program ket intri ich may systems and encourn n orga nost pro- economi ces can a garba by reducin erated at overlands. ating si accer clus ating si ac	increasingly priate food works which ive interface landowners sustainable tlands that agriculture this will employmen in and even nmunities i alue to those is network impetus foon through nt. agricultura ublic-private ns creating er linkage lead to self in the long rage Women anic home oduction and ic livelihood effectively age contro of garbage mall scale sters that are ther simila ard linkage



Outcome	Indicators	Typology of Possible		
		Interventions		
		 wetland conservation via economic management could be promoted as an effective and strong CSR slogan to attract the attention of larger organizations. 7. Establish economic centers titled as wetland centers that exclusively cater to the produce from wetland communities. It can function as a both raw material / and semi-finished and final product exchange. The center could also cater as a knowledge hub for the community with potential at national and international levels. A further extension is that smaller scale centers can be promoted at designated localities as further promotion of local produce from wetlands. This will establish wetlands as an economic resource for the good of the community. 		
4. To create and/ or strengthen institutional governance mechanisms through more inclusive and participatory decision- making processes at the landscape	 4.1. Level of understanding, commitment and accountability among state officials towards Sustainable management of Wetlands 4.2. Level of Local community involvement in Agriculture related social infrastructure maintenance 4.3. Tracking of violations of environmental laws and regulations, including inappropriate waste disposal, in each zone 4.4. Maintain a register of past, present and anticipatory local community wetland accessibility issues and 	 Enforce and closely monitor the implementation of the Environmental Laws related to the sustainable management of Colombo Wetlands. The gaps between desired levels of law enforcements and actual ground situations warrant immediate address and rectification. To monitor Industrial waste disposal into the wetland ecosystems to be managed by a Volunteer/ community- based Monitoring mechanism which is well supported by legal protection. 		



Oraba and a	In diantana			
Outcome	Indicators	Typology of Possible		
	· · · · ·	Interventions		
	 actions being taken 4.5. Actions taken to resolve issues with regard accessibility to wetlands by local community for economic and social activities 4.6. Number and nature of complaints made to the police about violations of wetland management by community, state institutions and other bodies 4.7. Monthly report narrative of the complaints and immediate action taken to mitigate issues circulated among policy makers, and ideally including working groups 4.8. Quarterly progress reviews/ report on progress on each issues highlighted in monthly reports 4.9. Progress on biannual Wetland Forum under the patronage of the CM/WP 	 complaining to other originations is a toothless administrative process. 4. Establish a one-stop mechanism regarding legal procedures related to farmer and small-scale entrepreneur assistance such as subsidies, loans, in financial aids, etc 5. Establish a community and all stakeholder -based consultative mechanism by encouraging and including Farmer participation at District and Divisional Agricultural Committee meetings. Adopt an inclusive transparent mechanism of all development activities with the engagement of affected communities. 6. Hold a quarterly or bi-annual Colombo wetland Forum under the patronage of the Chief Minster/WP, to deal with issues and the report on issues. 7. Micro mapping of all the wetland surrounding activities and ascertain the degree of vulnerability and risk 8. Create a well-functioning, efficient mechanisms to enable coordination, and communication, both vertically and horizontally, between state officials at all levels and the grassroots level in the formulation of policies and regulations related to the Wetland ecosystems. 9. Officially recognize and extend all forms of facilitations and institutional assistance to the farmers who engage in traditional agricultural practices, including in particular farming of local paddy 		



Autcomo	Indicators	Typology of Possible		
Outcome	multators	Typology		Possible
		Interventions		
		varieties.		
		10. Establish as	s a topmos	st priority a
		clear an	nd a	common
		understandi	ing and	workable
		definition as	s to 'Wetla	nds' that is
		agreed up	oon betv	ween the
		Relevant G	overnment	Agencies,
				and the
		Community.	Develop	a set of
		guidelines a		
		provide as l		
		making with		
		activities.	0	
		Setup an int	ter-institut	tional body
		with stakeh		•
		as an apex p	-	
		11. Develop a p	-	
		wetland ma	-	-
		and econom	-	-
		12. Establish a	-	
		good practic		
			-	
		NGOs and interfaces	betweer	-
		agencies a		recipient
		communitie	S.	

General Criteria for Project Selection

- 1. Impact on Conservation of Colombo Wetlands
- 2. Impact on Livelihoods Improvement of the Community
- 3. The Sustainability Aspect of the Proposed Project
- 4. The Scope and Number of Beneficiaries
- 5. Impact to improvement of the Productivity of Wetlands
- 6. Alignment between the objectives, methodological approach and outcomes of the project
- 7. Alignment with global/national goals



CBO/NGO Selection Criteria

It is a major concern expressed by the community on the accountability and trustworthiness of many Non-Government Organizations and Community Based Organizations in the past in terms of their Purposes and Active engagement in Sustainable Wetland Management. Community held the view that most projects had not achieved the claimed deliverables or never met the goals of 'benefiting the communities'. While this issue must be addressed as recommended under strategies stated above the followings criteria need to be considered in the award of projects. Among the criteria are:

- 1. Past Experiences in conducting community resilience enhancement programs
- 2. Past record demonstrating the ability to successfully complete the projects within the designated time frame.
- 3. Evaluations should also look at their professional conduct and community acceptance in the localities they operate through independent verification.

6. Landscape Strategy for Colombo Wetlands-Overall Validation

6.1. About the Validation Workshop

The validation workshop for the Landscape Strategy was held on April 6th, 2023, from 10.30am – 2.00pm at the premises of the Ministry of Environment. The workshop was attended by key stakeholders and line agencies responsible for managing and conserving three (3) ecologically sensitive landscapes namely, Knuckles Conservation Forest and its buffer zone, the coastal region from Mannar to Jaffna and the Colombo Wetlands namely, Wetland Management Division of Sri Lanka Land Reclamation and Development Cooperation Department of Agrarian Services, Department of Irrigation, Urban Development Authority (UDA), Central Environment Authority (CEA) and Department of Wildlife Conservation (DWC) etc.

The workshop's objective was to assess the effectiveness of ongoing conservation efforts and identify areas for improvement in aforementioned ecologically sensitive landscapes. The workshop commenced with three presentations from the three landscapes, which provided an overview of the current state of Resilience in Socio-ecological Production Landscapes (SEPLs) in each area. The presentations highlighted the challenges faced and the strategies being employed to address them.

Following the presentations, participants engaged in a Q&A session where they asked questions and clarified points discussed during the presentations. That session provided an opportunity for stakeholders to engage with each other and share their perspectives on improving socioeconomic conditions of local communities through implementation of



participatory environmental conservation, restoration, and sustainable livelihood interventions in their respective landscapes.

6.2. Feedback from Line Agencies on Landscape Strategies for Colombo Wetland Landscape

During the feedback sessions, line agencies were given an opportunity to provide their perspectives on the effectiveness of current conservation efforts and identify areas for improvement. This feedback is crucial as it helps ensure that landscape strategies align with their needs and priorities.

Overall, the majority of line agencies agreed with the key findings and landscape strategies proposed for the Colombo wetland landscape, which were developed based on communitylevel consultation workshop series. Since the Colombo wetland team had already paid attention to areas such as sustainable land use planning techniques, urban agricultural practices, pollution control, and others, there were no major constraints against the presentation.

However, the expert team attempted to prioritize the highlighted landscape strategies based on the feedback provided by line agencies. This allowed the team to identify areas that require more focus and attention, and to refine the strategies to ensure they are more effective.



Figure 10: The validation workshop for the Landscape Strategy- held on April 6th, 2023



6.3. Recommendations for Prioritizing Landscape Strategy Interventions- Colombo Wetland Landscape

Caring for urban wetlands operates on a set of interconnected principles that are crucial for achieving successful and enduring wetland restoration. The preservation, sustainable utilization, and restoration of wetlands, as well as the enhancement of skills and capacity, are crucial areas of focus. The topic of discussion pertains to the principles and practices of cooperative governance and partnerships. The act of disseminating information and expertise among individuals or groups is commonly referred to as "knowledge sharing." The topics of communication, education, and public awareness are of great importance.

Wise use of urban wetlands integrates the sustainable utilization of wetlands with the generation of employment opportunities and the mitigation of poverty, thereby achieving both ecological and social objectives. Therefore, strategies that focus on collaborative governance and partnership establishment with landowners, communities, civil society, and the private sector, utilizing wetland rehabilitation, become the utmost priority.

• Strategy 01

Promoting Traditional Livelihoods for the Sustainable Management of Wetlands

• Strategy 02

Empower and Facilitate Local Farmers to continue Sustainable Agricultural Practices.

• Strategy 03

Promoting Economic Monetization of the Ecosystem Services of Wetlands

• Strategy 04

Creating Broad Understanding and Awareness of Wetland Functions and the dynamics of Ecosystem processes

• Strategy 05

Promoting Evidence Based Research on Traditional Practices as a basis for Policy Formulation

• Strategy 06

Establishing Effective Mechanisms for Documenting Wetland-based Traditional Knowledge and Practices

• Strategy 07

Enhanced Coordination & an agreed Common Platform for various stakeholders operating within the Colombo Wetlands.

