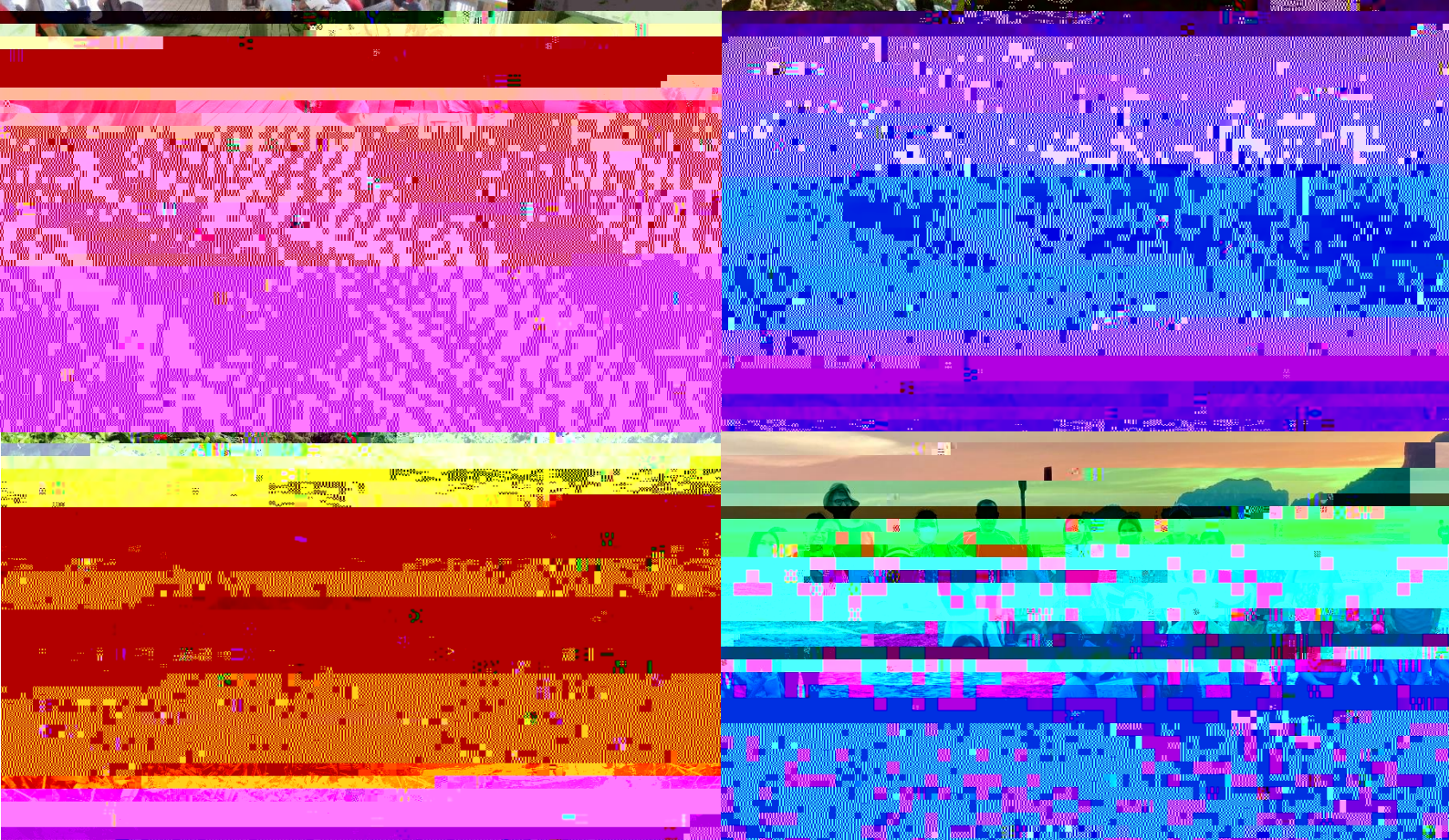


# AMSAR REGION'S SYNOPSIS OF BS



2022



Mekong WET: *Rebuilding Resilience of Watersheds in the Lower-Mekong Region*







The designation of geographical entities in this report, and the presentation of the material, do not imply the expression

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<b>ACB</b>	ASEAN Centre for Biodiversity
<b>AHP</b>	ASEAN Heritage Park
<b>BANCA</b>	Biodiversity and Nature Conservation Association
<b>BMUB</b>	German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety
<b>BPL</b>	Boeung Prek Lapouv
<b>CAWA</b>	Climate Adaptation in Wetland Areas
<b>CBD</b>	Convention on Biological Diversity

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The Indo-Burma region hosts a particularly large and diverse array of wetlands, including both freshwater wetlands, such as marshes, oxbow lakes, peatlands and flooded forests, and coastal wetlands, such as mudflats, seagrass beds, coral reefs and mangroves. These wetlands are home to nationally, regionally and globally important biodiversity, whilst also directly and indirectly supporting the livelihoods and well-being of millions of people through the ecosystem services they provide. Unfortunately, these same wetlands are also increasingly threatened by a wide range of development issues. At the same time, the growing impacts of climate change are expected to continue to increase average temperatures, change rainfall patterns, increase the intensity, duration, and frequency of extreme weather events, exacerbate cycles of floods and droughts, and increase sea levels along with a range of other environmental changes.

In response, the governments of



**Key recommendations for future IBRRI work:**

- Host trainings and workshops to increase understanding of EbA approaches, which may lead to an increase in the number of proposals to implement EbA activities in future calls for proposals.
- Future calls could also include a webinar or information session for questions and application support, which could be conducted in national languages by IUCN country offices.
- Future selection criteria, especially for short-term, low budget proposals, should consider the ongoing work of the applicant at the site and their long-term involvement at the site as part of the assessment.
- Continue to promote the Climate Change Vulnerability Assessment, and encourage its application in all 37 Ramsar Sites in the region, providing training courses on the methodology.
- In identifying adaptation options in situations where the relative impacts of climate change and other factors are not clear, so-  
be identified , so

## 1 INTRODUCTION

### 1.1 Background to the Development of Mekong WET

The Mekong WET project was conceived in 2014-2015 based on experience from a number of previous IUCN p

## **1.2 Indo-Burma Wetlands**

The Indo-Burma region hosts a particularly large and diverse array of wetlands, including both freshwater wetlands, such as marshes, oxbow lakes, peatlands and flooded forests, and coastal wetlands, such as mudflats, seagrass beds, coral reefs and mangroves. The people of Indo-Burma have depended on wetlands since the first cultivation of rice in the middle Mekong, 7,000 years ago, and the wetlands of the Indo-Burma Hotspot still provide direct support for the livelihoods of many communities today. Fisheries, for example, are a vital source of income and remain the single most important source of protein in the Mekong region, with the Mekong River support several million tons of fish each year. The coastlines of the Mekong region support more than 896,000 hectares of mangroves, which act as nurseries for fish and crustaceans, providing millions of people with food, while the Mekong Delta is the most important rice production



#### **1.4 Overview of Mekong WET: Building Resilience of Wetlands in the Lower Mekong Region through a Ramsar Regional Initiative**

Funded by the International Climate Initiative (IKI) of the German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB), from 2017-2022,



- Rapid assessment with limited field survey costs;
- Provides clear and explicit guidance on field information to be collected and analysed;
- Collected information is directly related to the socio-ecological system conceptual framework of vulnerability (e.g. exposure, sensitivity, adaptive capacity);
- Built-in ecosystem (species and habitat) vulnerability matrix, which reduces the amount of expertise, time and effort required for analysis;
- Independent of any specific climate change projections;
- Ecosystem focus: Habitat and S





## Outputs and Accomplishments

Community members collected 1,600 seedlings of six different native inundated forest species and nurtured these in the nursery established by the project. Not all the desired species could be sourced from local areas, so an additional 1,200 trees and shrubs were ordered from the Tonle Sap Lake area. At the end of June, prior to the onset of the wet season, WWT staff and five community members planted the seedlings in a 5 ha site in the northern section of the Core Conservation Zone which included a former area of gallery forest historically known as a popular waterbird roost. A brief check on the seedlings in late September revealed that only a few had died.

The hydrological assessment carried out

and updated the hydrological map of BPL and surrounding areas. From late June to September, a contractor hired by the project successfully restored degraded areas of grassland to support *Eleocharis dulcis* regeneration which is now being monitored in these areas. The outcome of these trials will be fully known in 2-

The law enforcement team and Field Monitoring Team (FMT) conducted 172 patrols along the main canal and key habitats of BPL. Maps and reports produced with SMART and GIS software were circulated to partners. Human activities inside the no-entry core area were recorded 37 times. Most were for collection of wetland resources, fishing, and the use of shortcut trails. On each occasion, the team explained the rules and regulations of the core area to the people encountered.

Teachers and students (292 in grades 4, 5, and 6, including 144 girls) of three schools (Kdol Chrum, Sangkom Mean Chhey, Bontey Tley), joined the Sarus crane and environmental education programme.

## Challenges Faced

COVID-19 in Cambodia restricted travel to the project sites and prevented WWT staff and partners from meeting contractors and local community members between February and May. Also due to COVID restrictions, village awareness raising meetings could not be held. As an alternative, audio messages were developed for mobile (loudspeaker) broadcast in five villages in June, and four villages in July. In addition, schools were closed from April until

the end of the project, and poor internet connection and mobile network coverage meant online teaching could not be organized for the students during the COVID lockdown. However, on 27 July 2021, an online training event was provided for 14 teachers.

Five cases of illegal encroachment occurred and around 70 hectares of natural habitat were ploughed. Ten villagers received warnings. Some of this land was quickly brought back under government control, whilst legal action was taken to regain the rest. The government adjudicated all prior land claims, and encroachment has since stopped. Buffalo grazing also impacted restoration work.

The grassland restoration was the first of its kind to use intensive methods and treatments, and it came at a sensitive time when there had been illegal encroachment using similar machinery. As a result, the authorities were rather nervous to go ahead with this and it was only approved rather late on. Fortunately, the rains also came late in 2021, so it was still possible to complete the work.

## Lessons Learned

Given the difficult and costly access to the site by boat, it may have been better to start with a smaller sized inundated forest restoration area. Drought conditions also made this activity more difficult as it was not possible to water all the plants when needed. In future, it may be better to grow saplings to a larger size in the nursery before out-planting. Also, natural regeneration could be assisted by removing climbers that smother regenerating trees.

## Sustainability

Further checks on restoration progress were made in February and June 2022 and dead trees were replaced with spare seedlings grown in the nursery. Additional funding has been secured from CEPF to continue the grassland restoration and law enforcement work, but no funds have been secured for the inundated forest work. However, the implementation of the pilot activity, and the strong community ownership and stewardship ensure that WWT is well placed to approach additional donors to support this. WWT has developed its niche in the Cambodian Lower Mekong Delta over the last 11 years and will continue to support work in Boeung Prek Lapouv in the future making a difference in a part of the delta that is not getting as much international attention as others.







## Outputs and Accomplishments

The vulnerability of ecosystems and livelihoods to climate change were assessed through:

- Individual interviews with 56 local community members and key informants such as village chiefs at all five villages within the area of influence of SSRS using the Mekong WET VA Village Tool.
- Completion of the Mekong WET VA Habitat Tool by the project team with the site manager for SSRS, and field research and remote sensing information.
- Completion of the Mekong WET VA Species Tool through interviews with experts from NatureLife Cambodia and BirdLife (for bird species), Fisheries Action Coalition Team (FACT - for fish species) and by the FCEE team for mammal species based on desk research as well as camera-trap and interview data.

FCEE also conducted 51 interviews with local community members at five villages focused on recording potential presence of fishing cats in the area and identifying threats to SSRS mammal species.

Potential options to address vulnerabilities and improve the resilience of wetlands and livelihoods were identified based on the results of research, the interviews above and the draft CCVA. The CCVA recommendations were provided to Toul Neang Sav Plov Loung Community Protected Area (CPA) committee for their members to conduct CCVA Validation workshops by themselves. FCEE provided a simple methodology to obtain (gender disaggregated) scores for each recommendation, gather additional suggestions from community members and select top priorities. The CCVA Validation workshops were successfully conducted during January 2022.

Throughout 2021, FCEE discussed options for forest fire prevention and mitigation with a variety of local stakeholders. Finally, it was decided that the most effective way to contribute to forest fire prevention and mitigation was to fund the construction of a watch tower at a priority site in the area overlapping SSRS and the CPA. FCEE allocated funds to build the tower from the IUCN Mekong WET budget for forest fire prevention and mitigation (33%, 2,000 USD) and from Fishing Camp Conservation BAO (27504(o)-9(v)6(750-7(pe)4(c)-5(i)-6(es)20008866 8L 3-3(60(r. nBT. USD).

## Challenges Faced

Invasive species such as water hyacinth and *Mimosa pigra* pose a serious threat to SSRS habitats; for *Mimosa pigra* the control strategies discussed hinged on coordinating removal with habitat restoration activities, thus areas where *Mimosa pigra* is removed would get immediately replanted with appropriate native species reducing probabilities of re-growth and recovering flooded forest habitats. For water hyacinth, FCEE is looking into possible uses and commercial partnerships that would allow for development of its collection and bas60(c l-362(de)4(v)

## **2.4 Mekong Broodstock Protection in Stung Treng Ramsar Site, Cambodia, Culture and Environment Preservation Association (CEPA)**

## Outputs and Accomplishments

Consultation with key stakeholders on broodstock zone conservation was carried out during a co-management workshop on 29 January 2021, with 55 participants. Two broodstock protection zones in Koh Russey and Koh Traeng were defined by participants.

A consultation meeting with Community Fisheries members and fishers on broodstock zone conservation and management was conducted from 27-30 April 2021 with participation of 55 fishers in the 10 CFIs in the two identified broodstock protection zones.

Awareness-raising activities on broodstock zone conservation for the closed fishing season were conducted with 155 CFI members (70 females) in the same 10 CFIs, in April and May. In addition, five billboards on the roles of CFI members in broodfish protection, 16 banners for promoting the conservation activities, 78 signboards on the conservation of fish, flooded forest, fish habitats and biodiversity for livelihoods, were installed prominently displayed at appropriate locations.

Two patrol posts were set up in Koh Russey (covering 7 villages) and Koh Traeng (covering 3 villages) and operated for protection of the broodstock zones in the five-month closed fishing season (May to September 2021). Two boats with engines were purchased, and equipment including hammocks, flashlights walkie-talkies, raincoats and life jackets were provided to the patrol teams. The patrol teams cracked down on 11 cases of illegal fishing, confiscated 11 boats, two engines and 11 sets of gillnets with a total length of 1,965 metres. In seven cases, agreements were reached to stop the illegal fishing activities.

On 22 December 2021, a dissemination workshop on broodstock zone conservation and management was conducted with 68 participants including 8 women. The workshop presented the key results from the broodstock zone management including the high level of collaboration from key stakeholders. Most fishers were satisfied with the initiative, and a decline in illegal cases including electro fishing and floating gillnets during the closed fishing season. Participants recommended that the patrol teams should operate all year round to curb illegal activities.

One Mini Trust Fund (MTF) was established on 3 September with \$5,000 initial capital to deposit in a bank for generating interest. It is a long term fixed deposit with annual interest rate

of 7.5%. The fund had generated \$90 in income in the first three months. The income will be used for supporting the implementation of the CFI management plan, including patrolling activities, installing signboards, and fishery law dissemination.

Two Cfi credit schemes in Thmey and Anlong Kohkang were each topped up with \$4,000 on 28 October. So far, 15 of 34 members have accessed the credit scheme in Thmey Cfi, while 15 of 57 members in Anlong Koh have done so. CEPA provided financial management coaching and back-stopping to these schemes.

## Challenges Faced

The COVID-19 pandemic and associated lock-downs had some impact on project activities. Food and supplies for the patrolling teams purchased by the project were rather limited, but the Department of Environment and the District Administration also helped to support them. Some illegal fishers were unhappy with the patrol teams and deliberately sank two boats. Thus far, the perpetrators have not been caught.

## Lessons Learned

The broodstock conservation zone is an appropriate mechanism for increasing participation and collaboration from all stakeholders (FiAC, DoE, Police, CFIMC). Many fishers support and are satisfied with the broodstock zone for protecting broodfish. The broodstock conservation zone has contributed to reducing illegal fishing in the Cfi management area. The number of electro-fishing incidents and large size gillnets dramatically declined.

## Sustainability

Effective conservation of broodstock is one key aspect in helping to support longer-term sustainable fisheries and local livelihoods. The deep hole dry season fish refugia may become even more important with increasing temperatures as well as unusual seasonal changes in water levels brought about by changing rainfall patterns and upstream hydropower development.

CFi Mini Trust Funds and CFI credit schemes may ultimately provide a





## **Outputs and Accomplishments**

A participatory baseline survey was implemented in April 2021 in the six target villages with 338 participants (198 females), mostly conducted through focus group discussions, with the findings from each group further discussed in large groups for consensus.

Thirty Vulnerability Assessment (VA) team members were selected in April 2021 (9 females), and the team was trained from 11-21



## **Outputs and Accomplishments**

In early May 2021, FFI established the project Vulnerability Assessment (VA) team with six members including research team leader, representatives of local stakeholders,

## **4.2 Kye-in Lake Wetland Management & Climate Change**

## **Outputs and Accomplishments**

FOW implemented engagement meetings at three villages. A total of 56 villagers (41 males and 15 females) attended at Kye-in, 40 people

### **4.3 Pyu and Paleik Lakes Wetland Management & Vulnerability Assessment, Biodiversity And Nature Conservation Association (BANCA)**

Waterbird Survey at Pyu Lake

## **Outputs and Accomplishments**

The VA was carried out as planned. The VA results identified that the marginal vegetation (*Typha augustifolia*) and seasonally emergent vegetation were found to be the most vulnerable hab

## 5 CASE STUDIES FROM THAILAND

### 5.1 Enhancing Community Participation for Climate Change Adaptation in the Bang Pakong Estuary, Rajabhat Rajanagarinda University (RRU)

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## **Outputs and Accomplishments**

Participatory appraisal of the community context and situation included construction of timelines and seasonal calendars.

Coastal erosion, land subsidence, marine waste and declining marine resources were identified as important issues in Song Khlong. While coastal erosion has been identified as a problem starting more than 30 years ago, it was suggested that reduced sediment flow to the estuary caused by the upstream Bang Pakong Dam, may have exacerbated coastal erosion since its construction in 1999, while the construction of rock dams 1 km into the sea had helped to some extent with the regeneration of mangroves.

The community id

**5.2 Promoting Community-Driven EbA Options and Communication, Ing River Wetland Forest, Hill Area Development Foundation (HADF)**

## **Outputs and Accomplishments**

Community capacity-ty





## 5.4

## Outputs and Accomplishments

The project identified two sites for nurseries, and 10 sites for water onion planting. 61 youth and schoolchildren collected 37,500 water onion seeds that were germinated in 2,500 pots. Subsequently 379 people participated in the planting of the water onions in the 10 identified sites including teachers and pupils from Baan Suanmai, Kaper Withaya, Kurabiri, Baan Bang Yai, and Baan Tumnung schools; as well as officials from Khlong Naka Wildlife Sanctuary and Sri Phang-nga National Park. Monitoring and follow-up of the planted water onions indicated survival rates between 60-90% at the different sites.

The East Forum Foundation together with Khlong Naka Wildlife Sanctuary and Sri Phang-nga National Park collected seeds of 13 different native riparian tree species, and germinated 5,000 seedlings. Trees were planted in upper watershed forests and canals that are inhabited by the water onion, including Khlong Tam Nang, Khlong Nang Yon, Khlong Kam Phuan, Khlong Bang Pru, and Kaper Community Forest. This selection of mixed species quickly establishes a forest structure that in turn encourages the reappearance of other components of the riparian ecosystem. Some seedlings were distributed to rubber farmers who decided to replace rubber trees with economic timber trees.

EFF held a t

wetland, using Vulnerability and Capacity Analysis Handbook. Participants identified areas at risk of flooding and drought in their communities, as well as noting trends in increasing frequency of these extreme events. Notably, they identified that the current level of variability exceeds the level at which their traditional knowledge can provide appropriate solutions. A household economy risk-reduction strategy of planting a mixture of drought tolerant and water hungry crops was recommended.

The project also supported in-farm ecosystem management training for 17 participants. This included topics on integrated farming, soil and water conservation techniques including mulching, green manure and mixed species plantings, production of organic fertilizer, and maintaining buffer zones between farmland and

water onion habitat. Twelve of the participants have used these methods in an area of about 5 ha.

## Challenges Faced

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## 6 CASE STUDIES FROM VIET NAM

### 6.1 Flood-Based Livelihood Models in Lang Sen Wetland Reserve, Department of Agriculture and Rural Development (DARD)

#### Objectives

Plant

Lotus fields, Lang Sen, Viet Nam © DARD, 2021



## **Outputs and Accomplishments**

## **6.2 Lung Ngoc Hoang Nature Reserve Vulnerability Assessment – Can Tho University (CTU)**



### **6.3 Phu Yen Habitat viability assessment for the conservation of critical habitat for the endemic Vietnamese Pond Turtle, Asian Turtle Program of Indo-Myanmar Conservation (ATP/IMC)**

#### **Objectives**

Conduct a habitat viability and climate change vulnerability assessment in wetlands of Tay Hoa and Song Hinh Districts.

#### **Target Beneficiaries**

Ea Ngao and Ha Roi villages in Hoa Thinh commune, Tay Hoa district; and My Dinh Village in Song Hinh commune, Song Hinh district, Phu Yen Province.

Habitat in Suoi Lanh, Viet Nam © ATP/IMC 2022

#### **Location**

Phu Yen Province, Viet Nam

#### **Duration**

March 2021 – March 2022

#### **Grant Amount**

EUR 19,414

#### **Contact Details**

Timothy McCormack  
Director, ATP  
Ha Noi, Vietnam

## **Outputs and Accomplishments**

ATP/IMC completed vulnerability assessments for the three target villages in March and May 2021. The team conducted participatory mapping exercises in each village to understand past and present land-use. Researchers completed socioeconomic questionnaires for 9 households in Hao Roi village, 10 households in Ea Ngao village and 11 households in My Dinh village during March and May of 2022. In Ea Ngao village, the ethnic groups present include Cham, and E De, while Ha Roi village has BaNa. In My Dien village, the population is made up of Kinh (the majority ethnic group of Viet Nam).

Extensive small rice fields are located in and around Suoi Lanh Swamp, with 800 individual parcels ranging from 43.5 – 2,350 m<sup>2</sup> in size. Some of the fields extend into the flooded area of the swamp and are inundated with water for some months of the year, in the southwest of the swamp some cleared areas are not included in the official land allocation for the commune, these likely represent areas more recently cleared for agricultural use. For Hao Roi and Ea Ngao Villages, land ownership has not been recorded yet, as this is a more remote, ethnic area.

For Song Hinh Lake, remote sensing images from 1980 show a largely forested river valley with evergreen forest on the hills and shrubland in the northern lower elevations. By the year 2000, shrubland was almost completely converted to agricultural land with some areas of hill forest also converted to cropland. By 2018, the valley was flooded, with water bodies in the study area increasing from 13 ha in 1980 to 6,094 ha in in 2020 while closed canopy broadleaf evergreen forest reduced from 8,453 ha in 1980 to only 3,525 in 2020.

For Suoi Lanh Swamp remote sensing in 1980 showed broadleaf evergreen closed forest coming down and into the swamp from the









## **Outputs and Accomplishments**

The project developed a framework assessment for granting of and trained three staff and two villagers at U Minh Thuong National Park on the assessment process.

The grant produced a short film about the values of the Ramsar site and the buffer zone as well as the meaning of the Ramsar label. The team also developed a brochure providing an overview of the Ramsar site and buffer zone products.

According to the assessment there are currently nine buffer zone products eligible for currently nine





awards process, which may not have allowed enough time to effectively promote and communicate the availability of the grants, or to address language barriers of potential applicants. A lack of understanding of EbA, and the Due Diligence requirements may also have been off-putting to some potential applicants, while yet others may have decided not to apply because of the COVID-19 situation and its potential to disrupt project implementation. Many applications that were received, were for assessments and research, whereas Mekong-WET preferred to support on the ground implementation of EbA measures. Only a few of the applications were from small, local CSOs. Even for the selected applications, the situation was of course further complicated by the difficulties for the grantees to hold community meetings and meetings with governments to get approval for their work.

Interestingly, the ongoing activities of the grant applicants, and their long-term commitment to the sites was not identified as a specific criterion in project selection yet in many ways this turned out to be a major strength of the portfolio of projects. Long-term presence of a grantee at a site, and their continued future commitment to the same site, provided two major advantages for the implementation of the projects:

- (i) While COVID-19 prevented or reduced the opportunities for face-to-f

3. Future selection criteria (especially for short-term, low budget proposals) should consider the ongoing work of the applicant at the site and their long-term involvement with/commitment to the site as part of the assessment.

## **7.2 Vulnerability Assessments**

Regardless of the diversity of agencies implementing the grants, the issues tackled, and the approaches used were quite similar. Seven of the grants were awarded to implement Vulnerability Assessments at the sites, using the methodology developed by the Mekong-WET project (Stung Sen in Cambodia; Siphandone in Lao PDR; Indawgyi Lake, Kye-in Lake, Pyu and Pailek Lakes in Myanmar; Lung Ngoc Hoang, Phu Yen and Tra Su in Viet Nam). At Boeung Prek Lapouv and Koh Kapik in Cambodia, it was very clear that the activities implemented responded to priorities identified through vulnerability assessments that had already been implemented by Mekong WET. At the remaining sites, activities generally seemed like they would help to address local vulnerabilities, but reporting did not explicitly link the selection of activities to vulnerability assessments.

The organisations that used the Mekong WET Vulnerability Assessment methodology all said that they found it a useful framework for understanding climate vulnerability. Some grantees noted that it was quite complex and took longer to implement than they initially anticipated, but all were appreciative that they now had the experience and capacity to be able to implement these vulnerability assessments. Several suggested they would consider using it at other sites and in other projects that the organization was managing, with one noting that this had strengthened their ongoing work at the site by allowing them to add a climate cTf9ETQq(o)13(t)-4(h



The four projects that created nurseries and engaged in other restoration activities (above)

## **7.5 Community Capacity Building, Multi-stakeholder Approaches and Education**

All of the projects included aspects of local capacity-building including the elements of capacity-





1. IBRRI should organize tailor-made trainings on gender mainstreaming for wetlands management to be offered to Ramsar site authorities and NGOs working at the sites. This could also be developed into an on-line training module.

## 7.8 Overall Conclusions

With a restricted time window for implementation, rather limited budgets, and the difficult situation in the midst of the COVID-19 pandemic and a military coup in Myanmar, the 17 grant projects have achieved significant results. This was also enabled by effective, efficient, and flexible administration and management throughout the life-cycle of the grants.

### Key Numbers

**55,300** seedlings, saplings and plants of inundated forest, riparian forest, mangrove seagrass and water onion species were produced and planted

**1,455** people were involved in project consultations, workshops and trainings (47.5% female)

**612** schoolchildren participated in educational activities (49% female)

**379** people planted water onions

**93**

Despite the difficult circumstances, a high level of sustainability is likely, due to the long-term commitment of many of the grantees to the same sites. Many have already identified additional resources to continue and build on the work supported by Mekong WET small grants.

While Mekong WET as a time-bound project has ended, the Mekong WET approach must continue to be promoted by IBRRI and IUCN, and IUCN should seek additional donor support to continue and build on the work of Mekong WET.

The 15 recommendations identified in this report can be used as input to the design of future funding proposals by IUCN.

