



Darwin Initiative/Darwin Plus Projects Half Year Report (due 31st October 2021)

Project reference	26-009
Project title	Enhancing wetland resilience for improved biodiversity and livelihoods in Cambodia
Country(ies)/territory(ies)	Cambodia/Vietnam
Lead organisation	Wildfowl & Wetlands Trust (WWT)
Partner(s)	NatureLife Cambodia (NC) Department of Freshwater Wetland Conservation (DFWC) Cambodian Rural Development Team (CRDT) <i>Note: Previously also BirdLife International, Cambodia Programme, but responsibilities transferred to NC in line with approved change request.</i>
Project leader	Bena Smith
Report date and number (e.g. HYR1)	October 2021, (HYR3)
Project website/blog/social media	N/a

1. Outline progress over the last 6 months (April – Sept) against the agreed project implementation timetable (if your project has started less than 6 months ago, please report on the period since start up to end September).

Output 1: AP, BPL and the wider CLMD wetland landscape are better understood and showcasing best practice local adoption of Ramsar recommendations and tools.

Good progress made over the last 6 months. Two large research surveys completed that have greatly advanced our understanding of the hydrology and physical landscape of both sites. The CLMD assessment is now back on track and field work scheduled after delays due to Covid.

Activities 1.1 - 1.6. Assessment of conservation status of wetlands in the Cambodian Lower Mekong Delta and regional capacity building for the application of associated assessment tools.

Fieldwork for Rapid Assessments of Wetland Ecosystem Services (RAWES) and biodiversity assessments was significantly affected by Covid-related travel restrictions, with planned trips postponed numerous times in response to government announcements. The field team is fully trained and ready to conduct the assessments, currently scheduled for late October through to mid-December. Sites have been shortlisted in consultation with the Ministry of Environment (MoE). Despite numerous setbacks, we are confident the field surveys will go ahead in the coming months and the final report produced then shared through relevant channels. In order to increase the impact of the report, extensive searches were conducted for historical biological records in an attempt to understand and present historical trends at the sites.

In August the draft CLMD report was presented to senior MoE staff, project partners and IUCN-Mekong staff. This generated useful feedback and helped refine the list of RAWES sites. The report highlighted an urgent need to prevent Vietnamese intensive rice farming practices spreading to the CLMD, and in response WWT and the IUCN-Mekong office engaged the Asian

Development Bank in a discussion on the prospects of future collaboration on wetland conservation, infrastructure development and water management in the CLMD catchment.

Transboundary Ramsar Management Effectiveness Tracking Tool (R-METT) workshops continued to be put on hold due to international travel restrictions. Such restrictions seem unlikely to be lifted, so a virtual workshop is now planned with the two Vietnamese sites (Tram Chim NP and Phu My). R-METT will then be completed on those wetlands by site staff. Although not a specific Darwin activity, WWT developed a full set of Climate Change Vulnerability Assessment training materials, and will include training on this topic to the Vietnamese wetlands. Furthermore, R-METT and RAWES training will be given, possibly at the next IBBRI meeting in early 2022. We are currently seeking funding to set up a National Ramsar Committee for Cambodia to support Cambodia's implementation of the Indo-Burma Ramsar Regional Initiative's Strategic Plan. Within this, we aim to support an assessment of the state of management of Cambodia's key wetland sites using the R-METT tool. WWT have recently led a similar assessment for Madagascar's 21 Ramsar sites, so have suitable experience in this area.

Activities 1.7 - 1.10. Ecohydrological Research at Anlung Pring and Boeung Prek Lapouv

During the reporting period good progress was made to further the ecohydrological understanding of AP and BPL. Protocols were completed for habitat assessments (fixed point photography/drone) and habitat/land-use mapping, bringing the total to 8 completed protocols within the project so far. Data is being collected for all protocols. Due to a substantial delay in receiving the water quality monitoring equipment (at the Cambodia customs), water quality data collection was delayed, however as an interim arrangement the services of a local laboratory were employed. If an opportunity arises, research findings will be presented at District meetings in Takeo and Kampot Provinces.

In September, detailed elevation surveys (with a UAV drone) were successfully conducted for AP and BPL with full permission granted by the MoE. The main outputs of the assessment:

- An orthophoto map with 2cm resolution and contour lines of 10cm interval for AP;
- An orthophoto map with 2cm resolution and contour lines of 10cm interval for BPL;
- Digital Elevation Model and Digital Terrain Model for both sites; and
- Three new benchmarks set up at the sites to aid future ground-based surveying.

Between July and September and series of hydrological surveys were conducted at AP and BPL with full permission granted by the MoE. WWT staff accompanied the consultant's field team to learn survey techniques such as flow measurement and levelling. The main outputs of the surveys:

- Updated hydrological maps for AP and BPL and surrounding areas including locations of major water control structures;
- Channel cross sections for future hydrological modelling;
- Recommendations on water quality monitoring locations and flow measurement points;
- Water balance calculations for different habitat types;
- Levelled (in AHD) water level gauges and groundwater dipwell tubes; and
- A comparison of historical hydrological changes at BPL since 2007.

Liaison Panel meetings have not been possible in the reporting period. When/if restrictions ease, a meetings will be set up for AP and BPL. Although the participatory proceedings of district development planning were put on hold due to the Covid restrictions, WWT maintained its advocacy to influence local decision makers.

To make sure that our conservation concerns are reflected in local planning decisions at AP, WWT established an informal group consisting of the deputy governor of Kampong Trach district and a major private sector investor (with a high national political influence) to discuss the community development and conservation in AP. This group ensures that all of the activities and developments in AP will support wetland conservation and community development. This coalition organized a meeting with the minister of environment (coordinated by the private sector) in which the minister agreed with the proposal of the AP coalition to

designate an adjacent wetland habitat to AP, known as Phnom Teuk, as a new protected area. Phnom Teuk is a wetland and karst cave complex system which provides a feeding habitat to sarus cranes and produces Lepironia, a wetland plant used in the production of handicrafts. Based on the minister's decision, WWT will facilitate research to better understand the ecological characteristics of the Phnom Teuk wetland and landscape.

Output 2 - Protected Area Management Plans informed by a participatory zoning process are developed, endorsed by government, and implemented at AP and BPL, with local communities understanding and adhering to their regulations.

Mixed progress towards achieving Output 2 within the reporting period. The process to zone BPL is moving forward at a very slow pace and now fully under government control. Illegal land encroachment continued with 5 cases reported. The delivery of education and awareness activities had to be adapted, but was implemented successfully.

Activities 2.1, 2.4 and 2.5. Zonation of BPL

The zonation process at BPL continues to progress slowly and land tenure claims are yet to be resolved by the Takeo Provincial Government. Working with our project partner, four approaches were made for Provincial consultation, but delayed due to Covid. We are aware the Takeo DoE has no previous experience of minuting a protected area, and we will work to build their capacity in this area through WWT's Government Liaison Officer. The zonation process is now highly unlikely to be completed before project end.

Activities 2.2 - 2.3. Assessment of Climate Change vulnerability at AP

The AP vulnerability assessment is in draft form and the results and findings will be incorporated into the site management plan before project end.

Activities 2.6 - 2.9. Promoting rules and regulations and monitoring and patrolling at AP and BPL

Many village meetings could not be organised due to Covid. Therefore 2,000 posters were printed and shared at both sites, and commencing in June, radio broadcasting methods used (BPL 4 villages, AP 5 villages) reaching an estimated 1,900 families.

In BPL a total of 10 commune councils and officers were met. At commune offices, the education team educated staff about the importance of the wetland and sarus crane in BPL and requested the commune chief or commune council members to help stop the illegal activities, especially illegal land encroachment. Six sarus crane photographs with a key message to encourage all people to protect the landscape were given and displayed at commune offices. At the district level, the same awareness visits were conducted at Borey Chulsa and Koh Andeth. In August and September, small group meetings were held in four villages to raise awareness about the importance of the AP wetland ecosystem. A total of 125 people were reached including the deputy governor of Kampong Trach. Due to the rise in illegal encroachment activity this year (see below), broadcasting will be stepped up in the coming months. A questionnaire has been developed and is to be rolled out in October to help assess people's awareness of the rules and regulations.

At BPL three sign boards were produced and installed at strategic points where many local communities travel such as Banteay Tlay Primary School, Sangkom Meanchey Pagoda, and near the BPL headquarter. These sign boards provide information about the importance of sarus crane and encourage local people to manage their agriculture hazardous waste. Six small sign boards to describe key bird species, including sarus crane, were installed at the bird watching tower in AP. The objective of these smaller signboards is to inform people about the key bird species of this protected wetland and to encourage conservation and management support.

109 law enforcement patrols were completed at BPL, with only one illegal fishing activity encountered. 69 patrols completed at AP and no illegal activities encountered.

Unfortunately, five cases of illegal encroachment involving the ploughing of around 70 hectares of natural habitat occurred, mostly during the lock down periods. As a result 10 villagers received warnings. Some of this land has now been brought back under government control, whilst legal action is underway (by the government) to regain the remaining land. A Provincial decree is being pursued by the project team to address the illegal land take. Once signed by Takeo's governor, the zonation committee will then have the power to act and retake back land.

The BPL rangers introduced Spatial Monitoring and Reporting Tool (SMART) mobile usage into their law enforcement practices. Monthly virtual meetings were held to review data and at as an opportunity for rangers to feedback about anti-corruption.

Activities 2.10 - 2.12 Management planning and international designations at AP and BPL

The government decided to designate BPL as a Ramsar Site, then as a Flyway Network Site at a later time. A Ramsar Information Sheet has been prepared and the DoFW agreed to support the Ramsar designation once zonation is complete. To ensure current resources are focused on BPL, the designation of AP as a Ramsar site will be progressed in several years' time.

Activities 2.13 - 2.14. Environmental education and awareness

Teachers and students (292 in grades 4, 5, and 6, including 144 girls) joined this year's sarus crane and environmental education programme. In April the schools were closed due to the Covid situation and remained so throughout the reporting period preventing full delivery of the teaching work plan developed earlier in the year. Due to the three target schools being located in a remote area with poor internet connection and mobile network coverage, online teaching could not be organized for the students as advised by the government. The priority therefore changed to training teachers and on 27 July 2021, an online training event for 14 teachers from the three schools was delivered. The training improved teachers' knowledge on (1), Biodiversity and Ecosystem, (2), Sarus crane and its habitats, (3), Wetland protected landscape, and (4), Threats including environmental pollution and climate change. Afterwards, teachers felt more confident to deliver environmental education topics in the following school season.

In response to schools closing, a small wetland centre was set up at AP to show educational videos and engage with an educator. The target audience is school children from six primary schools and secondary schools located nearby.

Output 3 – 1,700 local people in AP and BPL are directly profiting from sustainable livelihood ventures that also reduce wetland degradation

The community fisheries component of Output 3 is not progressing well due to the delayed zonation process at BPL and an apathy within AP CPA members is proving challenging. The sustainable agriculture component made reasonable progress and some successes in implementing the new schemes.

Activities 3.4 - 3.6. Sustainable agriculture scheme around AP

Due to travel restrictions, technical trainings could not be delivered by CRDT staff before the Mung Bean planting period (May-June). Some verbal advice was given via telephone. In total 55 farmers planted Mung Bean.

The Jasmine rice and Black Brown rice planting went ahead as planned and all relevant technical training (7 events) was delivered. 55 farmers planted Jasmine and 2 planted Black Brown rice in July 2021. A decision was made to keep the harvested rice seed as stock for the following year.

A review of the initial data suggests less chemicals were used in the reporting period compared to previous. This may in part be due to the drought where some farmers missed a rice crop.

The CRDT project team conducted follow up meetings and coaching activities with the 55 household farmers who grew mung bean and 57 household farmers who grew the rice. This feedback will be used to improve the scheme in 2022.

A 2nd sustainable rice scheme, called 'sarus crane rice' is being supported and during the last 6 months project partners recruited a further 41 farming households, with 61 farm plots (37.58 ha). CRDT set up 8 field demonstrations to pilot weed management by ploughing at the tillering stage. The farmers plant rice palatable to sarus crane, and signed up to using reduced pesticides and fertilizers.

The 200 farmers target was not met in 2021, the project partner CRDT is currently promoting the schemes to encourage uptake in 2022.

Activity 3.7. Community fisheries

In BPL there is no legal basis for MoE to support the establishment of a CFI because CFI's are under the Ministry of Fisheries and the zonation process is not complete. Within the reporting period WWT helped prepare a list of activities from the Business Plan for CFI's to prioritise for implementation when zonation is complete.

Based on the results of a rapid assessment of the impacts of Covid, WWT and its partner Planete Urgance, a volunteer supply NGO, initiated recruitment of a professional volunteer to provide a Financial Literacy training course to those community members. The training to be delivered in October and November 2021.

Activities 3.8 - 3.9. Capacity building of community associations

The recycling business set up by the AP CPA group in December 2020 (biodiversity and waste management group) continued to operate by collecting plastic waste. During the reporting period, training was provided to this group about bookkeeping, monthly member meeting arrangements, and benefit-sharing. According to the benefit-sharing policy, the group agreed to retain 20% as net profit for the Agriculture Hazardous waste management fund to cover the cost of community-based agriculture hazardous waste management in the future.

In AP, 7 trash boxes were provided for 6 schools and one for the headquarter of the protected landscape. These boxes encourage children, local people, and tourists to separate out recycling plastic and compostable waste. The teachers of each school are encouraging their students to use these boxes.

Output 4 - The extent and quality of biodiversity habitat and productivity of natural resources are increased at AP and BPL through community-based wetland restoration in core protection and sustainable use zones.

The restoration of inundated grassland and flooded forest habitats progressed well and was completed to a good standard. Similarly, invasive species were controlled across large areas of the sites.

Activity 4.1, 4.3 - 4.6

A 25ha area of grassland was restored at BPL. The process to agree a location for the restoration involved substantial negotiations between WWT and the local community, rangers, partners and MoE. Additional consultations were held with local people to ensure the waterways being 'blocked' did not impede the movement of site users around the wetland. Ongoing land ownership disputes at BPL made this process difficult. Prior to the commencement of on-site activities, WWT had to raise awareness among local communities through displaying posters at community information points and talking to village heads about this activity to avoid being mistaken for illegal land encroachment. WWT hired an experienced local community member to oversee the contract selection process, then supervise the on-site work of the chosen contractor. This was necessary because WWT staff could not visit the project site frequently due to travel restrictions. From late June to September, the contractor successfully:

- Infilled 800m of an unused ditch surrounding the water management control plot to raise groundwater levels inside the plot;

- Ploughed an 8 ha area of poor quality grassland inside the 16 ha water management control plot to investigate the effect of this treatment;
- Impounded an 8 ha area of grassland by constructing a 2m wide x 4m high bund to retain water for longer at the end of the wet season;
- Blocked 24 unused ditch sections to reduce the loss of water from grassland areas and raise groundwater levels over an approximate 10 ha area; and
- Lowered the ground level by 10cm in an 8 ha area to promote wetter ground conditions for Eleocharis grass species to establish.

Through vegetation surveys, the regeneration of Eleocharis is now being monitored in these areas, the outcome of which will be known in 2-3 years' time. A lot of practical wetland restoration knowledge has been learnt, which will benefit future restoration works. A further 25ha of grassland is to be restored in February 2022.

Following the recent completion of two important site-wide surveys (elevation and hydrology), an ideal habitat map will be produced to identify restoration areas (grassland, flooded forest, ponds, waterways, etc.) at AP and BPL. Consultation with local communities will be necessary and agreement sought from stakeholders. The output will be shared with DFWC when complete.

A second round of flooded forest restoration was completed in BPL in June. WWT staff and 5 CFI community members planted the seedlings in a 5ha site located 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 only a few had died. Our team will check the health of the planted trees in February 2022 at the end of the wet season, then again in June. Any failed trees will be replaced with spare seedlings grown in the nursery.

Activity 4.2

In August, 11 local people were employed to cut down Mimosa in a 42 ha area inside BPL. 5 kg of Mimosa fruit was burned to prevent it seeding. The water hyacinth composting trial continued. With about 320Kg of compost produced each month. The compost has been applied to rice fields to reduce chemical fertiliser usage.

2a. Give details of any notable problems or unexpected developments/lessons learnt that the project has encountered over the last 6 months (for COVID-19 specific delays/problems, please use 2b). Explain what impact these could have on the project and whether the changes will affect the budget and timetable of project activities.

The ongoing delays to zone BPL, and in the knowledge the process will not be completed before the Darwin project end date, means several indicators under Output 2, and the CFI components under Output 3 cannot be achieved before project end. Other activities are affected e.g. reaching agreement on restoration locations under Output 4, and the lack of resolve led to a worrying number of illegal land encroachments in 2021.

Following a national order of the Cambodian Prime Minister on the allocation of land from protected areas to communities, the MoE organised a campaign to speed up the zonation of protected areas. The Secretaries of State under the Minister were assigned to different protected areas to facilitate the process. For unknown reasons, the process to zone BPL is taking longer in comparison to other protected areas. Despite WWT and project partners' endeavours to understand and influence the issue, no significant progress has been observed. Furthermore, due to the politically complicated nature of the land conflict in BPL, the government announced that International NGOs are not being invited to proceedings. This decision demonstrates a lack of transparency and is troubling. Adding to this, it seems the district government and provincial government are using lockdown and travel restrictions as excuses to delay dealing with illegal land encroachment.

2021 was another drought year at AP and BPL. For the sustainable rice project, about 17% of the mung bean crop died in the early wet season and the remaining crops produced relatively low yield. However farmers who planted the standard local IR rice in the early wet season (same period as mung bean) had 80% damage due to the drought conditions.

2b. Please outline any specific issues which your project has encountered as a result of COVID-19. Where you have adapted your project activities in response to the pandemic, please briefly outline how you have done so here. Explain what residual impact there may be on your project and whether the changes will affect the budget and timetable of project activities.

During the reporting period:

- Covid restrictions prevented Phnom Penh based project staff from traveling to AP and BPL or to the other CLMD sites to undertake RAWES and biodiversity surveys.
- Several BPL rangers had to self-isolate which temporarily reduced the no. of staff patrolling that site.
- The communities around AP and BPL avoided face-to-face meetings and were reluctant to meet people from outside their immediate area.
- Technical training on new crops (mung bean) could not be given to farmers;
- Three target schools around BPL closed and the environment education programme could not be taught as planned.
- One of the project partners' key staff (from CRDT) contracted Covid and could not visit AP.
- International travel for our staff to sites in Vietnam was not possible. Also, due to lengthy quarantine rules in Cambodia, the new Project Leader was not able to visit the main project sites or project staff.

Despite this we were still able to complete most tasks in the last 6 months by adopting the following actions:

- We reduced the frequency of missions and number of staff on each mission.
- Staff used preventative equipment and also offered them to participating community members.
- Before and during missions, staff and participants were asked to provide proof of a negative Covid test, and any person in close contact with a Covid case requested to quarantine.
- Virtual meetings and telephone conversations substituted for face-to-face meetings.
- In some instances, local community representatives were employed to complete tasks e.g. supervise contractors or register farmers for the sustainable agriculture scheme.
- Adapt methods eg. mobile broadcasting awareness messages when group gatherings were not permitted.

Despite these measures, Covid will have enduring impacts on the activities and results of this project. Limitations on organising community events or national workshops will likely remain until the end of 2021. This project expected to disseminate its results in Year 3, however there is a likelihood that those dissemination events will be modified to comply with Covid regulations. Although the content will be delivered as planned, the effectiveness of online meetings in delivering the message remains a concern.

As the in-country vaccination programme progresses, Covid restrictions are expected to ease allowing the backlog of field tasks to be caught up. However among local authorities and communities the concerns will remain and this will be a challenge.

The recent death of a number of local police officials in BPL due to Covid, raised sensitivity among the rangers and communities. It may compound delays in resolving the land tenure conflict and zoning.

Some field activities remain to be impacted from the Covid situation such as the work with BPL's CFI's on waterway management and alternative livelihood schemes. The rehabilitation of

the CFI initiative, requires the physical gathering of the majority of its members and various meetings with the government. Despite all of the plans and preparations, it is unlikely that CFI can meet at least until the last quarter of the project.

Due to the combined direct and indirect impacts of Covid and the delayed BPL zonation process, several indicators and tasks will need to be changed for the final 6 month period. As suggested by the reviewer of the Year 2 Annual Report, these will be presented to LTS in a formal change request.

2c. Have any of these issues been discussed with LTS International and if so, have changes been made to the original agreement?

Discussed with LTS: **Yes/No** (at end of Yr 2)

Formal change request submitted: **Yes/No** (at end of Yr 2)

Received confirmation of change acceptance **Yes/No** (at end of Yr 2)

3a. Do you currently expect to have any significant (e.g. more than £5,000) underspend in your budget for this year?

Yes **No** Estimated underspend: £

3b. If yes, then you need to consider your project budget needs carefully. Please remember that any funds agreed for this financial year are only available to the project in this financial year.

If you anticipate a significant underspend because of justifiable changes within the project, please submit a rebudget Change Request as soon as possible. There is no guarantee that Defra will agree a rebudget so please ensure you have enough time to make appropriate changes if necessary. Please DO NOT send these in the same email as your report.

4. Are there any other issues you wish to raise relating to the project or to Darwin's management, monitoring, or financial procedures?

We appreciate the reviewer feedback to our Annual Report for Y2, and it has helped us to shape our partnership's approach to the final year of the project. As requested by the reviewer, we will address some of the feedback in the Final report for this project, but we were concerned to read criticism of our 'top-down' project approach, as that runs strictly counter to the approach that we take at the site. Within the Y2 project report we wanted to be completely transparent about the work-arounds we have had to put in place during a time when community meetings were prohibited and travel was restricted. Read out of the wider context, we understand that this may create the perception that we are not adopting a participatory approach - for example broadcasting pre-recorded awareness messages rather than having community workshops and events as originally planned. We would like to state that our work at these sites is a long-term partnership with the communities that has been ongoing for over ten years. The messages in this case for example were drafted by community groups several years ago, and are now being re-used given the current pandemic conditions. Another example, the BPL Management Plan has been developed alongside the community over several years, and builds on the BPL Vulnerability Assessment for the site which followed the IUCN's highly participatory approach, completed prior to the pandemic whilst fieldwork was possible. We had wanted of course to wait for zonation to be complete before finalising the plan, but given the extensive delays, we had decided that some management based on best available knowledge and consultation is certainly better than no management at all.

We simply wanted to provide this context to the reviewer, and will provide the appropriate evidence and further clarification in the Final Project report as requested.

If you were asked to provide a response to this year's annual report review with your next half year report, please attach your response to this document.

Please note: Any planned modifications to your project schedule/workplan can be discussed in this report but **should also** be raised with LTS International through a Change Request. **Please DO NOT send these in the same email.**

Please send your **completed report by email** to Darwin-Projects@ltsi.co.uk. The report should be between 2-3 pages maximum. **Please state your project reference number in the header of your email message e.g. Subject: 25-001 Darwin Half Year Report**