



Illegal Wildlife Trade (IWT) Challenge Fund Annual Report

To be completed with reference to the "Writing a Darwin/IWT Report" Information Note: (https://iwt.challengefund.org.uk/resources/reporting-forms-change-request-forms-and-terms-and-conditions/). It is expected that this report will be a **maximum** of 20 pages in length, excluding annexes)

Submission Deadline: 30th April 2021

IWT Challenge Fund Project Information

Project reference	IWT083
Project title	Illegal trade & sustainable use of medicinal orchids in Nepal
Country	Nepal
Lead organisation	Lancaster Environment Centre, Lancaster University
Partner institution(s)	Lancaster Environment Centre, Lancaster University, Greenhood Nepal, University of Oxford, IUCN SSC Orchid Specialist Group, University of Hawaii
IWT grant value	GBP 132,114
Start/end dates of project	1 October 2020 - 30 September 2022
Reporting period (e.g. April 2020-Mar 2021) and number (e.g. Annual Report 1, 2, 3)	October 2020 - March 2021 (Annual Report 1)
Project Leader name	Dr Jacob Phelps
Project website/blog/social media	In progress (social media posts can be tracked via #NepalOrchids @GreenhoodNepal)
Report author(s) and date	Reshu Bashyal, Kumar Paudel, Jacob Phelps

1. Project summary

Nepal hosts >500 orchid species, more than 100 of which are exploited for Ayurvedic and Chinese medicinal trade—including charismatic and IUCN-evaluated Endangered, Critically Endangered and Vulnerable species. Most species, however, remain unevaluated, but there are widespread accounts of extinctions and local/regional extirpations due to overharvesting. Indeed, many orchids are sensitive to over-harvest due to their biology. Yet, Nepal's orchids are also economically important to many rural communities across the Chitwan-Annapurna Landscape (CHAL), including to socio-economically disadvantaged Indigenous groups. A series of policy changes have meant this trade has been, at different times, both legal and illegal—causing confusion, uncertainty, under-reporting and mismanagement. At present, harvest is likely to again become legal with the existence of management plans, but a lack of baseline data, lack of taxa-specific technical expertise and few economic incentives for sustainable sourcing mean that unsustainable and illegal trade remain rampant. This threatens not only orchid conservation, but also the livelihoods dependent on them. It also undermines ecosystem services, destroys natural heritage, and forgoes opportunity costs of sustainable harvest and ecotourism.

This project focuses on all orchids commercially harvested from the wild for trade, specifically those we already know are threatened, such as *Cypripedium himalaicum* (EN), *Gastrochilus calceolaris* (CR), *Gastrodia elata* (VU), *Dactylorhiza hatagirea* (all trade banned in Nepal), and *Dendrobium* spp. (e.g., D. nobile, subject to previous CITES actions).

The project involves local and national government stakeholders, orchid experts, plant traders, and harvesters in an effort to reduce illegal trade, fill core data gaps, and promote sustainability legal trade. This includes the first concerted efforts to promote monitoring, enforcement, and seizures of orchids in the country. It addresses this by preparing the first-ever baseline on the illegal trade to integrate orchids into domestic policy and facilitate appropriate enforcement but highlighting the topic and filling in knowledge gaps needed to enable enforcement.

Concurrently, the project is engaging with international orchid experts to provide the science underpinning more sustainable management of wild orchid populations. Although we know many orchids are threatened by unsustainable harvest, we know little about what could make harvest more sustainable. We are engaging with experts globally to evaluate the available science to make proposals about how wild harvest could be more sustainable.

On the ground in Nepal, the project works with five communities in three districts within the Chitwan-Annapurna Landscape (CHAL): Gorkha, Makawanpur, and Kaski (**Figure 1**). These regions are not only orchid hotspots, but a large number of residents, including many Indigenous groups (e.g., Tamang, Gurung, Dalits) whose livelihood rely on forest products. For example in Bhadaure Tamagi alone, nearly 4000 people's livelihoods rely on forest products, particularly in the collection, processing, and trade of medicinal plants.

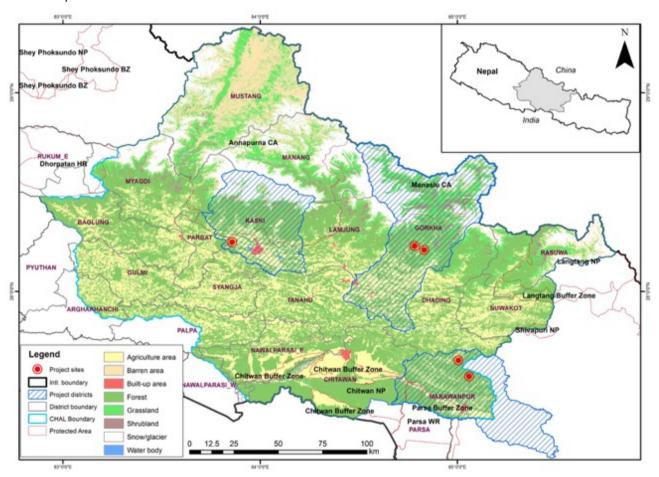


Figure 1. Project sites in Kaski, Makawanpur, and Gorkha Districts inside the Chitwan Annapurna Landscape (CHAL).

2. Project partnerships

The project is led overall by Lancaster Environment Centre, with field implementation led by the NGO, Greenhood Nepal. It involves further partnership with orchid experts at University of Oxford, University

of Hawaii and IUCN SSC Orchid Specialist Group. The project partners are working collaboration with national government offices in Nepal (e.g., CITES, Ministry of Forests and Environment, Department of Forest and Soil Conservation), and local government units and resource users in Nepal's CHAL landscape (divisional forest offices in 3 districts and Community Forest User groups) (see **Annex 4.3.2**).

Over the first six months of the project, the project partner have worked together in good faith and with regular communication. We held a virtual project kick-off meeting in October 2020 with the partners, we created communication groups over Slack and WhatsApp where the partners communicate regularly, including a team meeting of Lancaster and Greenhood at least twice a month. The key meeting details are updated in a record-keeping minute sheet with key highlights and action points (**Annex 4.3**).

The partnerships were based on demand stemming from the project lead and host country, notably Greenhood Nepal identified this an important gap and reached out to relevant government offices (e.g., CITES, several District Forest Offices) that confirmed this was an important gap. The partners were involved in the overall project design and remain involved in guiding decisions about its implementation. Much of day-to-day task are left to Greenhood Nepal, but in frequent consultation with the other partners—with Universities of Hawaii and Oxford providing technical inputs, and Lancaster providing technical, management, reporting, budget, and monitoring inputs.

Key lessons

- Start government approval processes earlier. Especially due to COVID-19 restrictions, it took us
 a series of communications/follow-ups to obtain formal approval from the government and with
 the Social Welfare Council (Annex 4.4).
- Although with some delay and increasing unexpected workloads, the trust and sense of understanding between the key partners (and the donor agency) helped the project team in Nepal share their on-ground issues and explore solutions to undertake the project activities successfully.
- Starting with partners and individual collaborators who have strong existing relationships is important to overcoming inevitable challenges and stressors.

Key strengths relate to:

- Our team reflects diversity on several axes, including nationality, religion, gender, disciplines (law, ecology, economics), and between academics and practitioners.
- The key project staff in Nepal are early-career researchers. This project has helped them to enhance their capacity in implementing and leading the project.
- Other relevant local institutions, including, where applicable, UK Embassies and British High Commissions), local communities, and technical specialists who are not formally partners in the project have been involved as appropriate.
- Participation of outside experts in shaping the project: We have received significant interest and voluntary support from outside orchid experts, conservation practitioners, and traders, who are lending their expertise to the project, including the project site selection and the development of research tools.

Summary of relationships:

LEC - Greenhood Nepal: This is the primary partnership that involves levering the UK University expertise to support a growing Nepali NGO with project and policy support. This relationship started before the project planning phase and has significantly strengthened, especially after the formal recruitment of the Project Manager and other staff at Greenhood. LEC has been effectively coordinating among the partners including providing technical expertise on IWT and orchidology (co-designing research tools, analysis, Outputs 1, 2), and engagement at the science-policy interface (Output 5) which has strengthened the technical capacity of Greenhood to implement activities on the ground. This partnership is important to Greenhood because LEC is a leader in environmental research with recognized excellence.

University of Oxford - Greenhood: This partnership started before the project development phase and is getting better after the project implementation. A. Hinsley of the University of Oxford was involved from the planning phase, and she has a key role in providing technical expertise in IWT, orchid trade, and research methods. In particular, she has been advising on expert elicitation to inform the PVA (Output 2), to collaborate on the analysis of trade data and trade dynamics (Output 1), and help inform the design of

the harvester monitoring (Output 2). She will contribute to the analysis and writing and international communications such as via CITES (Output 5).

LEC-University of Hawaii: Since the start of the project, Tamara Ticktin has been leading the PVA analysis (Output 2) and co-designing the harvester monitoring (Output 2). She will be actively involved in all of the research design analysis and writing, as well as in helping to interpret how this can influence management in Nepal (Output 4) and internationally (Output 5).

Greenhood-government institutions: The project team in Nepal is working closely with the government institutions like the Department of Forest and Soil Conservation (DoFSC), Division Forest Offices (DoF), and Community Forestry User's Groups. The DoFSC includes key stakeholders of the project, including CITES management authorities and district-level bodies involved in forest enforcement and resources management, including orchids. Moreover, this collaboration will be essential to establish the new Task Forces and engage with local resource users to use co-produced science to inform decisions (Output 2). They will also draw on our resources to strengthen enforcement cooperation with other government agencies (Output 3). It is also from this agency that will recruit local, regional and national-level "champions" who can help with project profile and longevity.

In March 2021, the project inception workshop held in Kathmandu (**Annex 4.5**) brought together various orchid stakeholders and initiated a partnership (**Annex 4.5.4**) -- we thought to mention this because we were planning for the workshop from January. Over time, our communication, face-to-face interaction helped to form a new partnership with the government officials at our project sites, trader's association (Herbal Entrepreneurs Association of Nepal (HEAN), and Nepal Herbs and Herbal Products Association (NEHHPA), media, and experts.

Greenhood Nepal - The Federation of Community Forestry Users Nepal (FECOFUN): This was a demand-based partnership and improved after the project implementation, particularly in obtaining information about the local resource person. They will be more involved in local-level monitoring and resource management plan development to facilitate harvester monitoring and new Task Forces (Output 2) and training/awareness programs to support the integration of science into decision-making (Output 4).

Greenhood - Annapurna Conservation Area (ACA): Both institutions are Nepal-based and there is a good working relationship between them. Although the role has changed because of partnership with local governmental bodies and key community-based organizations, ACA will facilitate project activities, especially in identifying potential harvesters and contacts of ward chair of Conservation Area Management Committee (CAMC) in Kaski District (Output 2).

3. Project progress

3.1 Progress in carrying out project Activities

We have focused on activities in Y. If an activity does not begin until Y2 or Y3, we have not listed it here.

Output 1: Nepal and CHAL governments and communities have the baseline trade, legal, and livelihood dynamics data needed to improve enforcement against orchid IWT, and guide environmental and social policy on legal orchid trade.

• Activity 1.1: Analyse historical CITES orchid trade data for Nepal

Legal orchid trade data from the CITES Trade Database was analysed to prepare an overview report (**Annex 4.6**). This was supposed to be completed by December 2020, but due to non-uniformity in Nepal's data reporting, it took us longer -- including in-person visits to consult with the CITES Authorities to clarify confusions and email communication UNEP-WCMC. The overview report presents the key findings, to which we hope to add in order to identify individual trade events.

 Activity 1.2: Compile historical data about orchid seizures from a newspaper review and enforcement agencies (Central Investigation Bureau, Department of National Parks and Wildlife Conservation, Department of Forest, Division Forest Offices, Annapurna Conservation Area Project) and prepare analysis We prepared a new dataset of all orchid seizures reported since 2010 (**Annex 4.7**), using data compiled from the newspaper archives, Central Investigation Bureau (CIB) of Nepal Police, and Division Forest Offices (DFO) of all districts (Gorkha, Kaski, and Makwanpur).

 Activity 1.3: Conduct review of Nepal's recent legislation (i.e. CITES law), and conduct consultation with legal/forestry officials to summarise and clarify Nepal's rules about orchid harvest and trade

We compiled Nepal's 54 existing pieces of legislation on wildlife, reviewed these for their relevance to orchids, and prepared an accessible, public-facing summary of the 9 relevant documents (**Annex 4.8**).

 Activity 1.4: Scoping of 5 villages across 3 districts, and informal permission from local authorities in 5 villages

We visited project sites and met with local government authorities of project sites in Gorkha (Dharche Rural Municipality, Laprak), Kaski (Annapurna Rural Municipality including Panchase Forest Area, Bhadaure Tamagi), and Makwanpur (Thaha Municipality). We obtained formal permission from each (**Annex 4.4**) and did a scoping survey to understand the key species in trade and the harvest regime/management (**Annex 4.2**). This scoping came considerably later than we planned due to COVID-19 and delays in securing government permits.

• Activity 1.5: Develop research instrument (trade dynamics & livelihoods)

Based on scoping described above (**Annex 4.2**), we have started to develop this instrument. This will be the core focus in Q1/Y2.

• Activity 1.7: Analyse and integrate secondary data (seizure, CITES, legal review) into a report (to inform the policy brief mentioned in Output 3)

We have compiled all of this data and an advanced draft of the report is completed (**Annex 4.6, 4.8**), which will be finalised in Q1/Y2.

Output 2: Improved understanding of how trade impacts wild orchid populations, including implementation of a pioneer harvester reporting scheme, to improve the management of legal harvest

Activity 2.1: Obtain formal research permissions from Dept. Plant Resources and the 3 Districts

We were instructed to apply for research permission from Nepal's Department of Plant Resources (DPR) on 24 July 2020. However, the Department referred us to the Department of Forest and Soil Conservation (DoFSC); we submitted an application on 27 July 2020 and received approval on 22 September 2020. We then communicated with local government officials but we had to visit in person, which was difficult due to COVID-19 restrictions. We visited the project sites and received formal permissions from all by 13 December 2020 (**Annex 4.4**). Then we submitted the documents to the Social Welfare Council (a new procedure) on 15 Jan 2021 and received approval on 16 March (**Annex 4.4**).

• Activity 2.4: Develop a draft protocol for orchid harvester monitoring. This will be developed in cooperation with researchers and IUCN experts to determine what data variables are needed and appropriate proxies. Importantly, we will also focus on what is feasible to collect, based on local realities (also determined as part of Activity 2.2). Data will focus on harvest data, notably harvested volumes, species targeted, type of harvest (e.g., whole plant, technologies used, etc), age class of harvested individuals, the proportion of population harvested, harvester effort in terms of time and distance, locations, economic value, and presence of other harvester activity). For target species, it will also consider very basic biological data about the wild orchid populations harvested, such as the number of individuals at sites and age classes.

We have convened an international group of orchid researchers with particular expertise in orchid population dynamics and life history, an exceedingly unique and specialised group of experts. Members of the group have met virtually >10 times (**Annex 4.15**). We have started to identify the most salient variables that should be monitored and develop a framework that will guide our monitoring protocol and help to inform how trade could be made more sustainable. However, his process has been slowed by COVID-19 and availability, but also by the scale of the technical challenge, which is greater than expected. We have an initial draft of this prepared, but are behind schedule. We plan to complete an advanced draft by July 2021 and have our protocol in place soon after.

Activity 2.13: Develop protocol for eliciting expert data for PVA analysis

The expert group described above (**Annex 4.15**) has identified a series of variables that, based on the literature and our expertise, are important to determining whether and how wild orchids can be sustainably harvested. This is currently developed into a draft academic manuscript that can then be developed into practitioner-facing resources, including to guide management and police in Nepal and internationally (e.g., CITES non-detriment findings)..

Output 3: Key central and local government agencies empowered, and demonstrate strengthened enforcement against illegal commercial trade of medicinal orchids

 Activity 3.3: Host national initiation workshop with national-level stakeholders to highlight enforcement needs against orchid IWT, and also discuss project design and attract support and exist strategy

We identified and emailed >80 participants, communicated with many over the telephone, and met with several experts and government officials to invite them to the workshop. We scheduled the event for the end of March, based on the availability of key officials of DoFSC, DFO, DPR, and most key academics and traders. The workshop was held in March 2021 with >40 participants representing government, academe, experts, media, plant traders, and orchid enthusiasts (**Annex 4.5.4**). This was larger than we anticipated, driven the scale of interest. The event received strong coverage in national media and on Greenhood Nepal social media platforms (**Annex 4.11**).

 Activity 3.5: Recruit "champions" in CHAL and nationally during various meetings/workshops, keeping records of likely supportive candidates and keeping in touch with them via meetings and email updates.

This will be done throughout the project, and we have identified perspective champions (n=6) eager to engage deeply with the project (**Annex 4.16**). This includes several local government officials who have informally (and verbally) agreed to provide all the necessary support to appoint and effectively implement this concept of recruiting the champions. We will finalize and formally appoint them in Y2.

• Activity 3.6: Monitor government enforcement data/seizure records throughout the project the project duration

To be done throughout the project. We have started by compiling historical/baseline seizure records (**Annex 4.7**).

Output 5: Increased awareness of the threats IWT poses to plants/ orchids among conservationists globally

• Activity 5.1: Maintain active Facebook and Twitter presence, highlighting project progress including sharing knowledge products

To be done throughout the project period. As of now, only from the profile of Greenhood Nepal social media pages (@GreenhoodNepal), we have shared 17 posts related to the project (n=8 tweets, n=4 facebook status, n=3 instagram posts, and n=2 linkedin posts) -- all these posts can be tracked via the #NepalOrchids hashtag (see examples and other details in **Annex 4.11**)

- Activity 5.2: Publish 4 blogs (e.g., on PVA, harvest, enforcement data analysis, trade data analysis)
- To be done throughout the project period, starting Y2. The background work that will generate the content for this is currently being done (**Annexe 4**).
- Activity 5.3: Publish 4 editorials in Nepal (e.g., on PVA, harvest, enforcement data analysis, trade data analysis)

To be done throughout the project period, starting Y2. Background work that will generate the content for this is currently being done (**Annex 4**).

3.2 Progress towards project Outputs

 Output 1: Nepal and CHAL governments and communities have the baseline trade, legal, and livelihood dynamics data needed to improve enforcement against orchid IWT, and guide environmental and social policy on legal orchid trade.

There are no existing resources to help guide such enforcement or improved policies. We drafted the first report on Nepal's orchid trade dynamics (**Indicator 1.1**), including the first thorough list of orchid species in commercial trade in Nepal (**Annex 4.2**, **Annex 4.5.3**, **Annex 4.9**); trade-chain map (**Annex 4.10**); CITES legal trade data (**Annex 4.6**) and seizure records (**Annex 4.7**). The reports are not yet finalised because the inception workshop was delayed and several academicians and orchid experts in Nepal are currently reviewing the report, but will be completed, published and disseminated in Q1/Y2.

Shifting legislation and low awareness of the rules mean that there is widespread confusion about the rules governing wild orchid harvest, and there are no clarifying resources. We hosted a dedicated session for this topic in the inception workshop (held in March 021) where Nepal CITES Authority Mr. Balram Poudyal clarified the current legal provisions at the inception workshop (**Annex 4.5.3**). We prepared an accessible summary of the legal status of wild orchid harvest and trade in Nepal (**Annex 4.8**) that will be published and disseminated in Q1/Y2.

There is no published work on the economic/livelihood importance of wild orchids in Nepal. We are preparing the baseline report to characterize orchid harvesters and their livelihood reliance on orchids (Indicator 1.3). So far, we have prepared a summary report that outlines the key species in commercial trade (**Annex 4.2**) and have conducted field scoping needed to generate this information in Y2 (**Annex 4.2**).

 Output 2: Improved understanding of how trade impacts wild orchid populations, including implementation of a pioneer harvester reporting scheme, to improve the management of legal harvest

There is only one synthetic paper exploring how orchid populations respond to wild harvest, published in 2020. However, there is still a huge gap and scientists can still not confidently issue recommendations on orchid harvest regimes. We have convened an expert group (**Annex 4.15**) that is helping to make suggestions; their work will provide the academic basis for then developing the monitoring protocol for use in the harvester-reporting scheme. Importantly, our expert group has concluded that - based on available data - whole-plant harvest of epiphytic species is very unlikely to be sustainable, and it is considering options that it can recommend to make harvest *more* sustainable (e.g., partial plant harvest regimes).

• **Output 3:** Key central and local government agencies empowered, and demonstrate strengthened enforcement against illegal commercial trade of medicinal orchids

We conducted one workshop with the central government in Kathmandu, with the participation of representatives from key government, civil society, academics and traders to discuss the status of illegal orchid trade in Nepal and implications for improved enforcement (**Annex 4.5.1** and **Annex 4.5.2**).

We are targeting a 30% increase in enforcement actions in CHAL resulting in more seizure records/documentation. So far have we collected n=17 orchid seizure records as a baseline over the past 10 years.

 Output 4. Wild orchid harvesters and traders understand sustainability issues affecting orchids ,rules governing orchid harvest and trade, and potential for improved legal resource management and reduced IWT

We obtained government permissions to work in 5 communities of 3 districts in the CHAL landscape (**Annex 4.4**), and conducted initial scoping of the communities and harvesters' practices (**Annex 4.2**).

 Output 5: Increased awareness of the threats IWT poses to plants and orchids among conservationists globally

We have shared the project-related information on our social media platforms (**Annex 4.11**). The project has also been mentioned in 7 articles in leading domestic newspapers, one radio interview on Gorkha FM, and one blog published on the Lancaster University website (**Annex 4.11**). Media uptake is greater than we expected and is promising. Once we have greater content to share, we will increase our own social media content to disseminate information.

3.3 Progress towards the project Outcome

Outcome 0.1: Nepal government and CHAL communities enforce against illegal orchid trade, and initiate a science-base legal alternative, raising global awareness about orchid IWT

The project is on track to deliver this outcome by the project end:

Indicator 0.1: We have had positive engagements with sub-national governments, including verbal commitments from the Division Forest Offices in our project sites to strengthen the enforcement against illegal orchid trade and include actionable steps relevant to sustainable orchid harvest and trade in their long-term plan of actions. Some of the districts already have orchids in their species harvest lists but they have not started due to the legal confusions and inadequte scientific information. It is still not yet clear from a biophysical point, how sustainable wild harvest of the priority species can be; this relies on data collected through this project.

Indicator 0.2: We are successfully involving the priority boundary organizations, even beyond those mentioned in the proposal (**Annex 4.3.2**) including local forest office representatives, community-based conservation organizations (Machhapuchhre Development Organization), representatives of community forest user groups, trader's association (Herbal Entrepreneurs Association of Nepal, and Nepal Herbs and Herbal Products Association). This has included face-to-face meetings as well as strong participation in our inception workshop (**Annex 4.5**).

Indicator 0.3: We have met with officials from key domestic enforcement agencies (**Annex 4.3.1**), which establishes the basis for engaging them with our resources to prompt greater enforcement action. In addition, we have established monitoring of seizures required to evaluate this change (**Annex 4.7**). We have conducted baseline reports, including legal trade (**Annex 4.6**) and local legislation (**Annex 4.8**) and trade chains (**Annex 4.10**) that will serve to illustrate the need for greater enforcement.

Indicator 0.4: To date, orchids have not featured heavily in Nepal's CITES agenda, as indicated by few legal expert permits or related events. However, we have met with them twice and found them very receptive. They also participated actively in our inception workshop with 2 representatives and other 7 government stakeholders **(Annex 4.5)**. This suggests a significant opportunity to engage CITES with our resources.

Indicator 0.5: During our scoping visits to the three project sites, we have met more than 10 medicinal plants harvesters to collect scoping data and establish initial contacts with the target communities. These provide the baseline for our upcoming efforts to engage, train and learn from harvesters in these communities.

3.4 Monitoring of assumptions

The previously identified outcome and output level assumptions for Y1 largely hold true so far, with a few important developments that are noted here:

Assumption: we will be abele to identify species in trade, which is often challenging when they are
out of bloom.

The assumption holds true, complicated because we are finding that the common names for orchid species are different across communities.

• **Assumption**: There is no known monitoring program implemented for wild orchid harvest anywhere in the world. As such, there will be technical challenges associated with its set-up, including harvesters' ability to reliably identify the species (even if using their own local taxonomy).

Our experts (**Annex 4.15**) have concluded that, for epiphytic species, whole-plant harvest is very unlikely to be sustainable. This presents clear challenges for the project, to which we are responding with a pragmatic approach of making harvest *more* sustainable, and or exploring alternative harvest regimes (e.g., partial-plant harvest). This will be an important point for discussion with government and harvesters, and means we need to manage everyone's expectations carefully,

• **Assumption**: Nepal recently implemented a new CITES law that unintentionally banned the harvest of all CITES-listed species. On paper, this technically ended all legal harvest of orchids. However, we know that it is ongoing as usual. This assumption has changed because there are active efforts to

revise the law to the re-allow harvest of Appendix II species, which we fully expect will have happened by the project start. In the unlikely event that it is not approved by then, our data collection remains fully relevant because trade is still ongoing.

Legal harvest is possibly returning with the presence of a management plan (note that, this is not yet formalized). We have explained this in legal analysis (**Section 3.1**) and discussed it with the stakeholders in the inception workshop (**Annex 4.5.3**).

• **Assumption:** There is a need to ensure that enforcement focus is not on small-scale harvesters and traders, but rather on commercial 'hubs' and exporters.

Comments: This assumption sounds true for large-scale exports but for small-scale exports, it is a different case. In our inception meeting, we had informal talks with the people of the trader's association -- all (n=5) attendees said that the buyers these days go to the village directly and connect with local, small-scale traders. This may also be because of current legal confusions that they find it easier to directly fetch plants from harvesters/local traders.

• **Assumption**: Orchid harvesters may sense new risks as a result of recent changes to Nepal's CITES law. As such, approaching them as general NTFP harvesters (orchid harvesters also collect other groups), may reduce risk and increase receptiveness to the project.

This assumption remains important. During our scoping, we found that harvesters were unwilling to talk directly when we started with discussing orchids, so we shifted to more general discussions about non-timber forest products, which made things easier.

3.5 Impact: achievement of positive impact on illegal wildlife trade and poverty alleviation

Impact: Reduction in illegal orchid trade in Nepal, replaced by science-based sustainable alternatives, serving as an innovating model for global action to end orchid IWT.

In these initial six months, we have secured meaningful engagement of key stakeholders, including government and harvesters in Nepal (Annex 4.3.2), above-expectation participation in the inception workshop (Annex 4.5.4); international orchid experts volunteering their time to the project (Annex 4.15), and a receptive media environment (Annex 4.11). These are the parties we need to catalyse discussion about enforcement and sustainability in Nepal, as well as to generate the data needed to make greater sustainability possible. That data includes basic science about orchid demography, as well as about legal clarity and policy engagement in Nepal. Over the coming 18 months, we are well-positioned to leverage this to increase enforcement to reduce illegal trade of wild orchids, while strengthening more sustainable and legal practices in ways that project species and ensure orchid-based livelihoods are premised on sustainable practices.

4. Project support to the IWT Challenge Fund Objectives and commitments under the London Declarations and Kasane Statement

The proposal contributes to three key objectives of the IWT Challenge Fund:

• Developing sustainable livelihoods to benefit people directly affected by IWT

We have started building partnerships with local government agencies and communities needed to meaningfully engage orchid harvesters and managers about their resources. To date, we have found two kinds of situations: a) where the communities are aware of the legal confusion around the legality of orchid harvest and hence do not want to talk about orchids, b) other groups who are naive and involved in illegal trade (**Annex 4.2**). Both cases are detrimental both to communities and conservation. Moving forward, we are trying to fill this gap by providing new data and tools to enable more sustainable management of orchid resources, including through co-production of knowledge with harvesters and local government.

Strengthening law enforcement

We have conducted baseline evaluations that highlight the limited scale of current law enforcement (**Annex 4.6, 4.7**) and existing illegal orchid trade dynamics (**Annex 4.10**). These are critical to now strengthening enforcement, particularly as plant trade has been so widely overlooked. We have also

helped to highlight illegal orchid trade as a significant issue in the media (Annex 4.11), which could be important to catalysing future enforcement.

• Ensuring effective legal frameworks

Nepal legislation allows for legal orchid harvest, contingent on there being appropriate management plans. However, there is not yet the existing science to enable these and, in their absence, the existing legal frameworks have limited practical meaning which is fostering illegal trade. We are helping to provide the science needed to make the existing frameworks operationalizable and/or demonstrate how they need to be revised (**Annex 4.15**).

5. Impact on species in focus

We are focused on all medicinal, commercially-traded orchids in Nepal. However, we have started by identifying which species of the >100 medicinal species in Nepal are being most heavily targeted by commercial trade (**Annex 4.9**), as much of the existing data is incomplete and out-of-date. This is important to target enforcement (**Indicator 0.3**), greater management of legal trade (**Indicator 0.4**), and to target sustainable harvest efforts (**Indicator 0.5**) to those genera and species that are most targeted and affected. We have started to hone this list based on the literature (**Annex 4.9**), field-based scoping (**Annex 4.2**) and discussions with experts and government (**Annex 4.5**), including in cooperation with traders, to identify the highest priority species. To date, we have started with a focus on *Dactylorhiza hatagirea* and *Dendoribum* species, which are guiding the expert evaluation (**Annex 4.15**). In Y1, however, we do not claim to have had impacts on specific species.

We have, however, raised the issue illegal orchid trade and medicinal orchid species as a priority, but neglected conservation issue in Nepal, which is likely to begin generating conservation impacts. This includes engagement of national-level stakeholders through the inception workshop (**Annex 4.5**) and stakeholder engagement (Annex 4.3.2), including of CITES Management Authority to which orchids are especially important. We have also highlighted orchid trade in social media and a series of national newspaper articles (**Annex 4.11**). These steps are creating an environment where orchid trade is more likley to be viewed as a conservation issue important for policy makers and enforcement. This can have benefits for improved management (**Indicator 0.3, 0.5**) and enforcement (**Indicator 0.3).**

6. Project support to poverty alleviation

Wild orchid harvesters, both legal and illegal, are normally from rural, poor, marginalized, often indigenous groups whose livelihood relies upon the harvest and trade of forest products. Yet, the harvest is often unsustainable, which imposes risks for community reliance in the long run. Moreover, recent regulations prohibit and criminalise trade in ways that are affecting harvesters. As such, we are working to provide the first study of the economic contributions and opportunities that orchid harvest and trade make to these poor communities, to inform policies on the sustainable management of these resources (Indicator 1.2, Annex 4.8). We are also providing the science needed to explore how these livelihood strategies can be made both legally compliant and more sustainable in the long term, if/where this is possible (Indicator 2.1, Annex 4.15).

The project will affect rural communities for whom wild orchid harvest is an important income generator, but whose activities are often illegal and, even where they are legally regulated, are not sustainably managed to provide secure long-term livelihoods (**Annex 4.2**). This is all the more important because several regional/national government reports express interest in exploring further sustainable commercialization of orchid resources for rural development (**Annex 4.5.3**).

The project will focus on a pilot monitoring project in 1 rural community (approx. 20 people) and engage at least 100 harvesters from Community Forestry User Groups in 5 socio-economically disadvantaged indigenous communities (**Indicator 2.2**). It will also sensitize 200 more people during different workshops (**Indicator 4.1**). These sites include indigenous and marginalized communities (Magar and Gurung groups), described in national statistics as >30% living below the poverty line. For these individuals, our interventions will monitor and improve orchid resource management to enhance the long-term income potential from using this resource, which otherwise risks collapse. The interventions will also reduce illegal trade that robs from the livelihoods of communities seeking to manage this as a legal resource.

For participating individuals, we will provide capacity building about monitoring, training about related rules and market dynamics, and short-term benefits associated with small incentives to participate in data collection. We will also seek to help empower harvesters so they can better manage their own resources, including via the co-production of knowledge (**Indicator 4.2, 4.3**) and through representation on the pilot Task Force (**Indicator 4.3**). We have started the groundwork to market his happen, notably gaining permissions, scoping (**Annex 4.2**) and local networking needed to gain access and trust.

Importantly, orchid harvest is part of the economy in hundreds of communities across CHAL, most of it illegal. As the government debates not only how to protect, but also regulate, formalize, and exploit orchid resources to better support rural incomes, this project will provide the data, protocols, and mechanisms that needed to make this happen, including to improve livelihoods sustainability and legitimacy. This creates new opportunities to explore ways of increasing local benefits in the orchid value chain, as harvesters currently receive small financial benefits from trade (Indicator 3.4, 3.5).

To maximize the impact beyond Nepal, the project will share findings widely through CITES Parties and IUCN (Indicator 5.4). This will work to support improved management of orchid resources in other countries, including enforcement against illegal trade of threatened species and creating the initial potential for improved management of economically valuable species, which to date has not been meaningfully explored. This has benefits for people who use and value orchids globally, with implications for one of the most known and charismatic plant families globally that has a range of specific cultural, medicinal, and culinary associations globally.

7. Consideration of gender equality issues

The project is considering gender dimensions in terms of the project team; ensuring women's views are reflected in the data we collect, and engaging women in activities wherever possible. We have been tracking gender-disaggregated data wherever relevant (e.g., (Annex 4.5.4, 4.3.2).

Our project team is primarily made up of women, including the Nepal project lead, our new project assistant in Nepal, the head of the PVA analysis. Indeed, the Nepal lead role is integrated with her involvement in and capacity building through the Nepal Conservation Research Fellowship. As such, the project has an explicit focus on capacity and opportunity development for a leading, early-career female conservationists.

Our initial scoping **(Annex 4.2)** shows the women and children are often involved in orchid harvest, and reportedly knew little about the illegality or unsustainability of harvest. The harvesters are often socio-economically marginalized and excluded from decision-making. As such, addressing gender equality issues is going to be central to the fieldwork of our project. Based on these insights, in Y2 we plan to make explicit efforts to ensure women's views are reflected in our data-collection, outputs and harvest monitoring, and that the instrument we design speak to their concerns.

Our engagement with national and local level government representative been overwhelmingly with men (**Annex 4.5.4, 4.3.2**). This reflects existing gender biases within leadership positions. However, we at our Inception Workshop we created space for a leading female orchid scientist to present (**Annex 4.5.2**). When it comes to establishing our own formal groups, the local Orchid Task Forces, we plan to ensure women are represented.

8. Monitoring and evaluation

Monitoring and Evaluation of the project are being managed by Greenhood Nepal with LEC oversight and is built into the project, tracking progress towards outputs and the outcome, collecting evidence, and allowing us to adapt our strategy across the 2 years. We are using two key record-keeping documents that are proving helpful: A minute sheet and Gantt where every single progress is recorded. The minute document, which is a google document, is updated after every meeting and shared with all participants. Likewise, all the details on the progress with the outputs and their activities are updated in a Gantt chart - it is a Google excel sheet where we have maintained all details in one place including the hyperlink for the folders/documents for evidence (**Annex 4.14**). These two documents have helped us to track the

progress and the continued feedback from the team has ensured excellent communication and problemsolving. In addition, the Social Welfare Council (SWC) of Nepal conducts external monitoring and evaluation of the project.

9. Lessons learnt

What worked well:

- The team has had very regular, often informal communication via WhatsApp, which has
 facilitated not only sharing of successes and relationship-building, but also timely discussion and
 resolution of day-to-day challenges.
- The participatory working approach enhances the effectiveness of project impacts thereby increasing the sense of project ownership by local government. The involvement of local community resource persons, government officials in the discussion, interactions, and other project activities have contributed to increased ownership. Involving a local resource person, we found other people willing to actively participate in project activities.
- The record-keeping documents- Gantt chart and the meeting minute sheet helped us to track things as well as to flag any urgent actions.
- Engagement of international academic experts in a question that is important to practitioners but also of academic merit has allowed us to access high-level expertise very cost-effectively.
- Prioritising budgets for international partners rather than those in the UK has allowed us to offer strong value for money. However, under-budgeting lead UK staff presents challenges in terms of ring fencing time for administration and technical support.
- Greenhood Nepal's existing in-country network and experience of the team helped us to engage all the key stakeholders in our activities. We have also received a very active participation of government officials, traders, and other orchid experts.

What did not work well:

- The government approval process took quite longer than expected, including due to the COVID restrictions and lockdown. The key lesson to learn from this would be to start early is always better, although this is often not possible until the funding is approved.
- It was very difficult to obtain seizure records from some of the Division Forest Offices -- the difficulty was not because they were unsupportive but because they have those records in paper-files in the store which is difficult to find and transcribe.
- The CITES Trade Database analysis was more challenging than expected because the records were incomplete and we have had to seek paper copy data directly from the CITES office. Overrelying on electronic databases has limitations.
- Working with species for which we have very limited basic ecological data, such as orchids is very technically challenging – especially when we want to answer higher-order questions such as how they respond to harvest.

10. Actions taken in response to previous reviews (if applicable)

Not applicable

11. Other comments on progress not covered elsewhere

The greatest technical risk we currently face is whether whole-plant harvest can indeed be made more sustainable. There is evidence that, under some circumstances, wild orchid harvest can indeed be sustainable, but we are not sure if / whether / how this will align with the realities of harvest in Nepal. If it cannot be scientifically justified, or proposed in a way that aligns with resource users practices, then we are going to struggle to reconcile livelihood-conservation trade-offs.

12. Sustainability and legacy

Interest in orchid conservation and trade issues has already grown over the first six months of the project, including among media, researchers, and Nepal's CITES Management Authorities. In addition, during our scoping trips, the medicinal plant harvester communities and local government authorities (Dharche Rural Municipality, Thaha Municipality, and Annapurna Rural Municipality) have showed encouraging interest in the project activities. We will work increasingly closely with them in Year 2 to help ensure our resources and policy advice are relevant and accessible to them, and that they have buy-in to engage with them.

We have built good working relationships with the central, provincial, and local government collaborators. We have received very positive response from the local-government agencies (for eg. Division Forest Offices of Kaski, Gorkha, and Makwanpur), the Mayor of Thaha Municipality (Mr. Labasher Bista), and the Chairperson of Annapurna Rural Municipality (Mr. Yubraj Kunwar) and Dharche Rural Municipality (Mr. Santa Bahadur Gurung), which are the key project sites. Besides the project activities, the government officials are eager to use our expertise in their work (e.g., in Dharche Rural Municipality, the government asked us to prepare an inventory of all available herbs and also said that they are eager to provide limited funding to the team in support of this). At the National level, we met the Director-General of the Department of Forest and Soil Conservation which acts also as the CITES Management Cuthority, and the Secretary of Ministry of Industry, Tourism, Forest and Environment in Gandaki Province, and other key enforcement officials (Annex 4.3.2). These all highlighted the need for a detailed understanding of sustainable harvest and trade of orchid species, which is something this project will work on and share with them for future orchid IWT control and legal orchid trade management. Such government engagement is a basis for project legacy in government policies and processes.

The project has also started to identify local "champions" during the scoping visits, who can act as promoters for orchid conservation, sustainable use and regulation. We will work actively with them in Y2 and Y3 to help build their interest and capacity, so they can be species advocate long after the project ends.

13. IWT Challenge Fund identity

Nepal has a long history of working partnerships with the UK government and the Darwin Initiative in wildlife conservation. However, there are only a few projects supported by the IWT Challenge Fund, meaning that few officials and communities are aware of this fund. The UKAID logo has featured in all activities and reports associated with the project with the review and permission from DEFRA officials (in email) (for eg. in all the publications like event flyer, agenda, and workshop proceeding report - **Annex 4.5.3**). Likewise, blogs and social media posts of the project lead Lancaster Environment Center in the UK and Greenhood in Nepal have highlighted IWT Challenge Fund and UK government support in a project press release, blogs, and social media posts. Moreover, the media publications/news reports that have mentioned this project have well acknowledged the support of the UK Government (**Annex 4.11**).

14. Impact of COVID-19 on project delivery

Our project started in October 2020 when COVID-19 was in full swing in Nepal. We tried to limit the movement of project teams by working from home and conducting meetings over online platforms (e.g., Zoom, Slack, Skype-- see **Annex 4.3**). However, there were some activities that required mandatory inperson meetings and visits (e.g., interaction with government authorities for project approval, **Annex 4.4** and scoping field trip, **Annex 4.2** as well as inception workshop, **Annex 4.5**).

The COVID affected our project permission process at the central and local governments as the offices were closed in lockdown period and then operating with limited capacity. It also made it very difficult to travel to the project sites to sign the project implementation agreement with the local governments. We visited the local government offices to sign the MoU with pre-permission and precautions.

Most of the reports and IWT seizure data are found only in paper files in Nepal. The travel restrictions affected our data collection for the first few months. We have slightly adjusted the work plan according to the field situations conducted at the scoping survey and stakeholder workshop at the end of the Y1.

To assure the health and safety of project staff and beneficiaries, we are conducting all the activities safely following the guidelines of the Nepal Government and WHO. Moreover, we also made sure not to do any of those aforementioned in-person activities during lockdown and strict COVID emergency period-- luckily, when we did those activities, the situation of COVID-19 in Nepal was a bit improved and the government allowed us to have in-person interactions with minor precautions like wearing face masks, globes, insurance of team, and maintaining distance. We followed all those precautions -- we did health insurance for all the project staff and equipped ourselves (and field team) with masks, sanitizers, gloves, etc. as required . Moreover, for those activities that could be done virtually, we continued working via virtual meetings.

15. Safeguarding

Please tick this box if any safeguarding or human rights violations have occurred during this financial year. If you have answered yes, please ensure these are reported to ODA.safeguarding@defra.gov.uk as indicated in the T&Cs.

Lancaster University has a safeguarding policy (https://www.lancaster.ac.uk/media/lancaster-university/content-assets/documents/strategic-planning-governance/publication-scheme/5-our-policies-and-procedures/Raising-Serious-Concerns-and-Disclosing-Public-Interest-Matters-Whistleblowing.pdf) and an Anti-bullying and harassment and sexual misconduct policy (https://www.lancaster.ac.uk/bullying-harassment-and-sexual-misconduct-policy/#:~:text=We%20have%20adopted%20a%20zero,treated%20with%20dignity%20and%20respect). These have been shared with downstream partners, although they have their own procedures. This is an area where Lancaster University institutionally needs to formalise policies / processes to ensure outside partners comply with our internal standards, and we have flagged this to Lancaster administrators.

However, perhaps more significant that these broader policies, is that Lancaster University has a rigorous research ethics approval process. This includes consideration of unintended impacts on project participants and vulnerable people, and which considers both risk and mitigation actions. Now that we have government approvals in place in Nepal, we are currently preparing this review process (expected June 2021). Greenhood Nepal clear understanding of these policies, having previously worked with Lancaster University ethics standards

16. Project expenditure

Project spend (indicative) since last annual report	2020/21 Grant (£)	2020/21 Total Darwin Costs (£)	Variance %	Comments (please explain significant variances)
Staff costs (see below)				
Consultancy costs				
Overhead Costs				
Travel and subsistence				
Operating Costs				
Capital items (see below)				
Monitoring & Evaluation (M&E)				
Others (see below)				
TOTAL				

17. OPTIONAL: Outstanding achievements of your project during the reporting period (300-400 words maximum). This section may be used for publicity purposes

The project has been picked up in a number of Nepali newspapers, significantly exceeding our expectations (**Annex 4.11**).

• Annex 1: Report of progress and achievements against Logical Framework for Financial Year 2020-2021

Project summary	Measurable Indicators	Progress and Achievements April 2020 - March 2021	Actions required/planned for next period
Impact: Reduction in illegal orchid trade in Nepal, replaced by science-based sustainable alternatives, serving as an innovating model for global action to end orchid IWT.		We have established local, regional, and national networks required to operationalize the project, including national and local government officials, orchid experts, harvester and trader contacts (Annex 4.16)	
		We have collected baseline information to understand the challenges facing orchid trade and conservation in Nepal.	
		We have clarified the legal ambiguities in relation to orchid trade and brought the issue in light (Annex 4.8)	
		We have started to raise the profile of orchid conservation as an important issue in Nepal (Annex 4.5, 4.11)	
Outcome 0.1: Nepal government and CHAL communities enforce against illegal orchid trade, and initiate a science-based legal alternative, raising global	0.1 Government authorities in CHAL (local authorities n=3, regional authorities, n=2) include actionable steps in support of orchid conservation in their annual or 5yr plans (baseline=mentioned in The Strategy and Action Plan 2016-25 but not operationalized via plans;	0.1 We have met with the local government agencies who create these plans (Annex 4.12) to obtain their permission (Annex 4.14) and their verbal support, with some potentially even as champions (Annex 4.16).	0.1 We will get the published copies of five-yearly plans from three districts and begin discussions with local managers about how different orchids species are / can be reflected in these (documents are not public until they are finalised
awareness about orchid IWT	1 0.2 Priority boundary organisations are engaged with project resources, including government authorities in CHAL (n=30), conservation organisations (n=25) and local forest office representatives (n=40), CITES authorities (n=10) (baseline= very few orchids focused resources exist for Nepal and stakeholders do not prioritize orchid/plant conservation, end-Y2).	0.2: We are successfully involving the priority boundary organizations, even beyond those mentioned in the proposal (Annex 4.3.2) including local forest office representatives, community-based conservation organizations (Machhapuchhre Development Organization), representatives of community forest user groups, trader's association (Herbal Entrepreneurs Association of Nepal, and Nepal Herbs and Herbal Products Association). This has included face-to-face meetings as well as strong participation in our inception workshop (Annex 4.5). It has also included strong commitment from international orchid experts (Annex 4.15).	0.2 We will more deeply engage these boundary groups, notably in the 3 districts and including harvesters. We will also formally identify orchid "champions" who can help disseminate project resources. We will share baseline reports that have the information needed to being presenting illegal orchid trade as a priority conservation issue.

	0.3 30% increase enforcement actions in CHAL resulting in seizures against large-scale illegal orchid trade (baseline=13 known orchid seizures reported in national newspapers since 2009, Government records exist but are not yet compiled, and this is an aim for Output 1; records will be compiled since 2010, and specifically for Y2 and Y3).	0.3: We have met with officials from key domestic enforcement agencies (Annex 4.3.2), which establishes the basis for engaging them with our resources to prompt greater enforcement action. In addition, we have established monitoring of seizures required to evaluate this change (Annex 4.7). We have conducted baseline reports, including legal trade (Annex 4.6) and local legislation (Annex 4.8) and trade chains (Annex 4.10) that will serve to illustrate the need for greater enforcement.	0.3 We will continue to engage with national and local enforcement bodies in the 3 districts to collect seizure data. We will also develop the policy documents needed to help inform improved enforcement.
	0.4 Nepal CITES Authority (part of the Dept of Forests) includes an orchid-related action into its annual plan related to meeting its commitments to trade in CITES App. II-listed orchids (e.g., training, increased enforcement) (baseline=orchids are not currently a priority, and CITES permits are not being allocated, as indicated by only 7 CITES permits	0.4: To date, orchids have not featured heavily in Nepal's CITES agenda, as indicated by few legal expert permits or related events. However, we have met with them twice and found them very receptive. They also participated actively in our inception workshop, sending 2 representatives (in addition to other 7 government stakeholders, Annex 4.5). This suggests a significant opportunity to engage CITES with our resources.	0.4 Continue to engage with CITES Authority, including to share our reports and publications to allow them to comment.
	issued in 2015 and 2016 for 17,617kg of <i>Dendrobium</i> spp.; end Y3). 0.5 Target communities (n=300 people, across 5 targeted communities) demonstrate improved awareness about the importance of orchids and rules governing orchid harvest and trade (baseline=0, end Y2)	0.5: During our scoping visits to the three project sites, we have met more than 10 medicinal plants harvesters to collect scoping data and establish initial contacts with the target communities. These provide the baseline for our upcoming efforts to engage, train and learn from harvesters in these communities.	0.5 We will finalise the monitoring protocol for orchid reporting. We will conduct interviews with harvesters and establish the networks and trust needed for this local engagement.
Output 1: Nepal and CHAL governments and communities have the baseline trade, legal, and livelihood data needed to improve enforcement against orchid IWT and guide	1.1 First report on Nepal's orchid trade dynamics, including an overview of historically legal and illegal trades; list of orchid species in commercial trade, contemporary trade chain map, and compiled data on seizure and trade since 2000	1.1 Overview reports (x3): Highlights from the seizure review, Nepal's CITES-reported orchid exports, and legal review have been prepared (Evidence provided in section 3.1, Annex 4.6, 7, 8)	1.1, 1.2 The reports will be made open access on the Greenhood Nepal website in Q1, as soon as the website is done with redesign. We are currently also turning these reports into a synthetic academic publication.
environmental and social policy on legal orchid trade.	 1.2 Baseline legal analysis to clarify the legal status of harvesting and trading orchids (and other CITES-listed plants) in Nepal (baseline=0 and much confusion because of changing regulations) 1.3 Baseline report characterizing orchid harvesters and their livelihood reliance on orchids (baseline=0, end Y2) 	1.2 We have identified the journal <i>Conservation Evidence</i> as target venue for publishing this data in an academic forum	1.3 Based on the scoping, we will conduct interviews with harvesters across the 3 districts to prepare this report.

Activity 1.1: Analyse historical CITES orchid trade data for Nepal		The analysis of the legal trade data as reported by Nepal CITES was done (Evidence provided in section 3.1, Annex 4.6)	The report will be made open access on the Greenhood Nepal website in Q1, as soon as the website is done with redesign.
Activity 1.2: Compile historical data about orchid seizures from a newspaper review and enforcement agencies (Central Investigation Bureau, Department of National Parks and Wildlife Conservation, Department of Forest, Division Forest Offices, Annapurna Conservation Area Project) and prepare analysis		Historical seizure records were compiled from all possible sources and summarized (Evidence provided in section 3.1, Annex 4.7)	The data from Kaski District Forest Office is yet to be received. To be finalized by Y2. The report will be made open access on the Greenhood Nepal website in Q1, as soon as the website is done with redesign.
	pal's recent legislation (i.e. CITES law), and conduct icials to summarise and clarify Nepal's rules about	A summary report from the review of the legal provision of Nepal's orchids is prepared (Annex 4.8)	The reports will be made open access on the Greenhood Nepal website in Q1, as soon as the website is done with redesign.
Activity 1.4: Scoping of 5 villages across 3 districts, and informal permission from local authorities in 5 villages		Scoping of project sites was done including obtaining formal permission from local authorities (Evidence provided in section 3.1, Annex 4.2, 4.4)	NA
Activity 1.5: Develop research instrument (trade dynamics & livelihoods)		Ongoing activity; the survey instruments have been started but is delayed because government permissions and COVID-19.	The draft instruments will be reviewed by the whole project team. Trial interviews to be done and based on pilot interview, survey tools will be finalized by Y2
Activity 1.7: Analyse and integrate report (to inform the policy brief m	e secondary data (seizure, CITES, legal review) into a entioned in Output 3)	Secondary data of seizure records, CITES data, legal review analysed (Evidence provided in section 3.1, Annex 4.6; 4.8).	The compiled report to be prepared by Y2
Output 2: Improved understanding of how trade impacts wild orchid populations, including implementation of a pioneer harvester reporting scheme, to improve the management of legal harvest 2.1 Draft protocol and trial resources to trial standardise harvester self-reporting of medicinal orchids. This includes supporting resources developed (e.g., simplified explanation of protocol, simplified species identification guide) to make protocol accessible to harvesters and local government authorities (baseline=0 globally known for monitoring wild orchid harvest; Y1)		2.1 We have convened a group of academic exper given that we need to first develop the academic b monitoring and policy (Annex 4.15). The protocol i 19 delays affecting availability, and the technical or	asis upon which to undertake this training, s not yet complete, however, due to COVID-
Activity 2.1: Obtain formal research permissions from Dept. Plant Resources and the 3 Districts		The formal research permission was obtained from all the required authorities/agencies (Evidence provided in section 3.1 of report and Annex 4.4)	NA

Activity 2.4: Develop a draft protocol for orchid harvester monitoring. This will be developed in cooperation with researchers and IUCN experts to determine what data variables are needed and appropriate proxies. Importantly, we will also focus on what is feasible to collect, based on local realities (also determined as part of Activity 2.2). Data will focus on harvest data, notably harvested volumes, species targeted, type of harvest (e.g., whole plant, technologies used, etc), age class of harvested individuals, the proportion of population harvested, harvester effort in terms of time and distance, locations, economic value, and presence of other harvester activity). For target species, it will also consider very basic biological data about the wild orchid populations harvested, such as the number of individuals at sites and age classes.		We have convened a group of experts to develop the basis for this protocol and a draft is underway (Annex 4.15). Scoping of project sites was undertaken to evaluate the local conditions/trade dynamics to help inform what type of protocol is needed and realistic (Annex 4.2).	Finalise the framework with the academic experts and use this to develop a userfacing, realistic protocol. Discuss and test this protocol on the ground to ensure it is appropriate.
Activity 2.13: Develop protocol for	eliciting expert data for PVA analysis	We have convinced a group of experts to developing the basis for this protocol and a draft is underway (Annex 4.15), but not complete due to delays and technical complexity of the task	Complete the academic exercise and prepare a manuscript.
Output 3: Key central and local government agencies empowered, and demonstrate strengthened enforcement against illegal commercial trade of medicinal orchids 3.3 Workshops (n=2) (one at the end of Y1 and other Y3) with the central government in Kathmandu, with the participation of representatives from key government and civil society groups and national orchidologists to discuss the status of illegal orchid trade in Nepal and drawing on Output 1 and 2 baseline research to discuss implications for improved enforcement and the viability of future self-reporting of legal orchid trade (n= 35/workshop) 3.5 30% increase enforcement actions in CHAL resulting in seizures against large-scale illegal orchid trade (baseline=13 known orchid seizures reported in national newspapers since 2009, government records not yet compiled but interviews suggest these are only occasional; Y2, Y3).		3.5 We conducted a baseline evaluation of historic met with Nepal CITES authority and enforcements enforcements, and legal status of orchid trade in Nofficials of all our project sites and discussed the enforcements.	seizures of wild orchids (Annex 4.7) , and podies to discuss the seizure cases, lepal. We also met with local government
Activity 3.3: Host national initiation workshop with national level stakeholders to highlight enforcement needs against orchid IWT, and also discuss project design and attract support and exist strategy		The national-level project inception workshop was held in Kathmandu with the participation of over 40 participants (Annex 4.5) and communication over email and telephone with over 80 key stakeholders.	NA
Activity 3.5: Recruit "champions" in CHAL and nationally during various meetings /workshops, keeping records of likely supportive candidates and keeping in touch with them via meetings and email updates.		To be done throughout the project period. We are at the initial stage of this activity. So far, we have identified champions (n=6) but they are yet to be formally announced (Evidence provided in section 3.1, Annex 4.16) We are at the initial stage of this activity. So far, we have identified	To be done throughout the project period. We will identify rest of the champions (n=24 more).

		champions (n=6) but they are yet to be formally announced (Evidence provided in section 3.1 , Annex 4.16)	
Activity 3.6: Monitor government enforcement data/seizure records throughout project the project duration		To be done throughout the project period and will be easier now that we have stablished relatinships with the district forest offices We finished the first stage of the collection of seizure records (Evidence provided in section 3.1, Annex 4.7)	To be done throughout the project period and will be easier now that we have established relationships with the district forest offices
Output 5: Increased awareness of the threats IWT poses to plants/ orchids among conservationists globally.	5.1 Global dissemination of results, sharing anecdotes/findings about orchid trade via Facebook and Twitter (n=80), targeting conservation influencers in civil society and governance to build broader support for orchid conservation (Y1, Y2)	5.1 We have posted some of the results via our social media posts (n=17) that can be tracked using #NepalOrchids hashtag over Greenhood Nepal's social media platforms (Annex 4.11). This will continue throughout the projecteh project and will get easier as we have more contento share.	
Activity 5.1: Maintain active Facebook and Twitter presence, highlighting project progress including sharing knowledge products		This is a continued activity to be done throughout the project period. So far we have posted some of our progress in social media platforms (Annex 4.11). This will continue throughout the projecteh project and will get easier as we have more content to share. So far we have posted some of our progress in social media platforms (Annex 4.11). This will continue throughout the project and will get easier as we have more content to share.	This is a continued activity to be done throughout the project period.
Activity 5.2: Publish 4 blogs (e.g., on PVA, harvest, enforcement data analysis, trade data analysis)		To be done throughout the project period, starting Y2. Background work that will generate the content for this is currently being done (Annex 4.6-4.10).	To be done throughout the project period, starting Y2. By Y2, we will be able to share at least 2 blogs.
Activity 5.3: Publish 4 editorials in Nepal (e.g., on PVA, harvest, enforcement data analysis, trade data analysis)		To be done throughout the project period, starting Y2. Background work that will generate the content for this is currently being done (Annex 4.6-4.10).	To be done throughout the project period, starting Y2. By Y2, we will be able to share at least 1 editorial.

• Annex 2: Project's full current logframe as presented in the application form (unless changes have been agreed)

N.B. if your application's logframe is presented in a different format in your application, please transpose into the below template. Please feel free to contact www.numerica.co.uk if you have any questions regarding this.

Project summary	Measurable Indicators	Means of Verification	Important assumptions		
Impact (30 words): Reductio	npact (30 words): Reduction in illegal orchid trade in Nepal, replaced by science-based sustainable alternatives, serving as an innovating model for global action to end orchid IWT.				
(30 words) Outcome 0.1. Nepal government and CHAL communities enforce against illegal orchid trade, and initiate a science-base legal alternative, raising	0.1 Government authorities in CHAL (local authorities n=3, regional authorities, n=2) include actionable steps in support of orchid conservation in their annual or 5yr plans (baseline=mentioned in The Strategy and Action Plan 2016-25 but not operationalised	O.1 Official planning documents from the local government and local conservation agency (CHAL authority) O.1 Evidence of exchange (e.g., emails) with government authorities	Local government agencies are receptive to our resources and are willing to make this a priority. Mitigation: Active relationship-building, including consultation that runs throughout the project.		
global awareness about orchid IWT	via plans; by end Y3) 0.2 Priority boundary organisations are engaged with project resources, including government authorities in CHAL (n=30), conservation organisations (n=25) and local forest office representatives (n=40), CITES authorities (n=10) (baseline= very few orchid	 0.2 List of stakeholder engagements impact log reporting on quality/status of engagement (see M&E) 0.2 Meeting documentation and photographs 	Enforcement agencies prioritise large-scale commercial traders (i.e. "big fish), over small-scale harvesters/traders that are often most subject to IWT enforcement. Mitigation: Clear communication with government agencies about enforcement priorities and need to reduce undesirable/inequitable social impacts of conservation enforcement.		
	focused resources exist for Nepal and stakeholders do not prioritize orchid/plant conservation, end-Y2) 0.3 30% increase enforcement actions in	0.3 Seizure reports from local forest offices, Central Investigation Bureau, CITES	We assume 30% increase is modest because few enforcement actions/seizures are reported in the media or in our scoping interviews. However, we will not know the exact numbers until after we compile government data (see Output 1)		
	CHAL resulting in seizures against large-scale illegal orchid trade (baseline=13 known orchid seizures reported in national newspapers since 2009, Government records exist but are not yet compiled, and this is an aim for Output 1; records will be compiled since 2010, and specifically for Y2 and Y3).	Authority and Dept. of Forests. 0.4 Summary of meetings with CITES Authorities	Government agencies (e.g., CITES Authority) are resourced and competent to implement their national legislation and international commitments. For example, most international trade in CITES-listed orchids is not currently accompanied by CITES permits. Mitigation: Engagement with government, development of highly-accessible resources, and public communication to raise awareness about the importance of		
	0.4 Nepal CITES Authority (part of the Dept of Forests) includes an orchid-related action into its annual plan related to meeting its commitments to trade in CITES App. II-listed orchids (e.g., training, increased enforcement) (baseline=orchids are not currently a priority, and CITES permits are not being allocated, as indicated by only 7 CITES permits issued in	 0.4 Records of the Nepal CITES Authority 0.4 WCMC CITES Trade Database evidence of increase in CITES permits 0.5 List of participants, gender disaggregated 0.5 Photos of community engagement programmes 	Harvesters are willing to participate in our activities, including self-reporting and workshops. Mitigation: Active engagement of communities and selection of several communities to test which groups are most receptive. We will also engage local conservation agencies and concession-holders, who regulate the legal orchid trade.		

	2015 and 2016 for 17,617kg of <i>Dendrobium</i> spp.; end Y3) 0.5 Target communities (n=300 people, across 5 targeted communities) demonstrate improved awareness about the importance of orchids and rules governing orchid harvest and trade (baseline=0, end Y2)	0.5 Before-after test with 50 random harvesters to evaluate knowledge and perceptions of harvesters (baseline=pre-test end of Y1, post-test end Y2)	
Output 1. Nepal and CHAL governments and communities have the baseline trade, legal and livelihood data needed to improve enforcement against orchid IWT, and guide environmental and social policy on legal orchid trade.	1.1 First report on Nepal's orchid trade dynamics, including overview of historically legal and illegal trades; list of orchid species in commercial trade, contemporary trade chain map, and compiled data on seizure and trade since 2000 1.2 Baseline legal analysis to clarify the legal status of harvesting and trading orchids (and other CITES-listed plants) in Nepal (baseline=0 and much confusion because of changing regulations)	1.1 Overview reports (x3) available open- access on Greenhood website and SocArXiv 1.1/1.2 Copy of journal publication synthesising findings, available open-access on Greenhood website and SocArXiv	We will be able to identify species in trade, which is often challenging when they are out of bloom. Mitigation: Involvement of international and domestic orchid experts. We will be able to access receptive participants across the trade chain, including where it is cryptic and illegal. Mitigation: Involvement of people experienced with IWT research and relationship building within orchid networks that we are already establishing.
	1.3 Baseline report characterising orchid harvesters and their livelihood reliance on orchids (baseline=0, end Y2)		
Output 2. Improved understanding of how trade impacts wild orchid populations, including implementation of a pioneer harvester reporting scheme, to improve the management of legal harvest	2.1 Draft protocol and trial resources to trial standardise harvester self-reporting of medicinal orchids. This includes supporting resources developed (e.g., simplified explanation of protocol, simplified species identification guide) to make protocol accessible to harvesters and local government authorities (baseline=0 globally known for monitoring wild orchid harvest; Y1)	2.1 Copy of one protocol document on Greenhood and OSG websites 2.1 One powerpoint presentation in English and Nepali explaining protocol available on Greenhood and OSG websites 2.1 Training material available on Greenhood and OSG websites	There is no known monitoring programme implemented for wild orchid harvest anywhere in the world. As such, there will be technical challenges associated with its set-up, including with harvesters' ability to reliably identify the species (even if using their own local taxonomy). Mitigation: Involvement of orchid experts and engagement with IUCN colleagues who have established similar schemes for other taxa (e.g., trees, crocodiles, pythons).
	 2.2 Local harvesters (n=>100) across 5 CHAL communities involved in 1-day workshop on harvest rules and potential for self-monitoring. 2.3 Local NTFP harvester self-reporting trialled in 1 CHAL harvester community for 4 months with engagement of the eco-monitor (baseline=0 globally; early Y2). 	2.2. Log of participants, gender disaggregated 2.2 Photo of workshops 2.3 Appointment of an independent local, trained eco-monitor at the target site to oversee data collection.	Nepal recently implemented a new CITES law that unintentionally banned harvest of all CITES-listed species. On paper, this technically ended all legla harvest of orchids. However, we know that it is ongoing as usual. In addition, there are active efforts to revise the law to re-allow harvest of Appendix II species, which we fully expect will have happened by project start. In the unlikely event that it is not approved by then, our data collection remains fully relevant because trade is still ongoing.

Output 3. Key central and local government agencies	3.1 Policy brief, "Combating illegal orchid trade in Nepal" based on Output 1 research	3.1 Policy brief copy available online at Greenhood and OSG websites	
	2.7 Trial establishment of a district-level Task Force to discuss new orchid data (i.e. Indicators 2.1-2.6) implications for their 5-year District Management Plan (baseline=no such platform exists, and orchid resources management is not currently explicit in the current management plans; established mid-Y2, with ongoing support into Y3)	2.7 Trial Task Force established in one district in cooperation with local harvesters and government 2.7 Task Force meeting reports on data collection and use of data to inform decision-making	
	2.6 Novel analysis on the sustainability of orchid harvest based on an expert-informed Population Viability Analysis, to inform harvest impacts for multiple species (baseline=approx.16 previous studies on orchid population dynamics (all species, globally) and only 1 study that seeks to make broader conclusions across species and time, end Y2)	2.6 Copy of journal publication, available open-access and on the Greenhood and OSG websites and SocArXiv	
	2.5 Analysis and report on orchid harvest dynamics, based on community-based reporting data to help inform sustainability of legal harvest (see Output 2; baseline=0 such analyses globally, end Y2)	2.5 New dataset of harvester-reported information 2.5 Copy of report, available open-access and on the Greenhood website	
	2.4 Interview-based feedback from self-reporting scheme participants (n= 30) to evaluate scheme design, perceptions of monitoring and willingness to engage long-term (end Y2)	 2.3 Agreements with, and log of participating harvesters. 2.3 New database of harvester-collected data (species lists, volumes, age classes, harvest methods, collecting effort) (Y2) 2.3 Tracking document of number of successful data submissions from each participating harvester 2.3 Rate of concurrence in data between independent eco-monitor and harvester data 2.4 Dataset of interviews 2.4 Report evaluating the design of the scheme, including from harvesters' perspective 	 Requires local willingness to participate in monitoring, including support from local conservation authorities, concession holders and harvesters. Mitigation: Clear communication about the potential benefits and importance of the project. High-level buy-in to the project to help ensure local government agents are receptive. In the absence of published ecological data on most of the harvested species, we are relying on expert-based elicitation to help populate the PVA model, which assume w will be able to access. Mitigation: Access to quality experts, including via the IUCN.

empowered, and
demonstrate strengthened
enforcement against illegal
commercial trade of
medicinal orchids

- (baseline=no such document available for the region; available online and 50 hardcopies distributed to key national and CHAL agencies and civil society groups by mid Y3)
- **3.2** Policy brief, "Trialling the monitoring and exploring sustainable legal orchid harvest to reduce IWT" based on Output 2 research that highlights lessons learned and discusses implications for legal trade and harvester self-reporting for orchids/NTFPs (baseline=0, 50 copies distributed to key national and CHAL government agencies, civil society and academe, Y3)
- 3.3 Workshops (n=2) (one at the end of Y1 and other Y3) with central government in Kathmandu, with the participation of representatives from key government and civil society groups and national orchidologists to discuss the status of illegal orchid trade in Nepal and drawing on Output 1 and 2 baseline research to discuss implications for improved enforcement and the viability of future self-reporting of legal orchid trade (n=35/workshop)
- **3.4** Key enforcement officials in CHAL and at national-level identified as potential "champions" (n=30) and directly engaged via courtesy calls with knowledge products (see indicators 1.2-1.3, 3.3) (baseline=0, Y3).
- 3.5 30% increase enforcement actions in CHAL resulting in seizures against large-scale illegal orchid trade (baseline=13 known orchid seizures reported in national newspapers since 2009, government records not yet compiled but interviews suggest these are only occasional; Y2, Y3).

- **3.1** List of people/groups to which brief was distributed and letters confirming receipt
- **3.2** Policy brief copy available online at Greenhood and OSG website
- **3.2** List of people/groups to which brief was distributed and letters confirming receipt

- **3.3** Lists of participants, gender disaggregated
- 3.3 Photographs of events
- 3.3 Workshop summary report

- 3.4 List of meetings across the 2 years
- 3.4 Impact log (see M&E)
- **3.4** List of people/groups to which brief was distributed and letters confirming receipt
- **3.5** Division Forest Offices and Park Authority, Central Intelligence Bureau reports of seizures and enforcement actions.

- Representatives from concerned agencies are willing to participate in the workshop and take this agenda seriously. Mitigation: Networking with high-level government agents to demonstrate its existing buy-in. Preparing compelling explanations for its importance to their roles. Further, creating public awareness/expectations that government responds to orchid conservation threats.
- CIB and local authorities are happy to support us and share the reports. Mitigation: We have existing collaboration with them and they have agreed to provide us with the required data.
- There is a need to ensure that enforcement focus is not on small-scale harvesters and traders, but rather on commercial 'hubs' and exporters.

Output 4. Wild orchid harvesters and traders understand sustainability issues affecting orchids,rules governing orchid harvest and trade, and potential for improved legal resource management and reduced IWT	4.1 Workshop conducted in 5 harvester communities/Community Forest User Groups in CHAL (n=200 participants) to highlight baseline data collected, provide legal clarity, and discuss their implications for harvester livelihoods and sustainability. (baseline=0, end Y3) 4.2 Harvesters demonstrate improved understanding of sustainability issues and rules (regulations, processes, penalties, Y2) 4.3 Harvesters are represented on the new monitoring district Task Force (Y2)	 4.1 Lists of participants, gender disaggregated 4.1 Photographs of events 4.2 Questionnaire with local harvesters (n=50) to evaluate knowledge of existing rules and regulations 4.3 Task Force membership list, gender disaggregated 4.3 Photos of Task Force 	 The broader community continues to recognize the importance of illegal orchid trade Orchid harvesters may sense new risks as a result of recent changes to Nepal's CITES law. As such, approaching them as general NTFP harvesters (orchid harvesters also collect other groups), may reduce risk and increase receptiveness to the project.
Output 5. Increased awareness of the threats IWT poses to plants/ orchids among conservationists globally	 5.1 Global dissemination of results, sharing anecdotes/findings about orchid trade via Facebook and Twitter (n=80), targeting conservation influencers in civil society and governance to build broader support for orchid conservation (Y1, Y2) 5.2 Editorials on orchid trade and conservation in leading Nepal newspapers (baseline=1, Y2=2 editorials, Y3=2 editorials) 5.3 Blogs (n=5) on orchid trade for international platforms, including for IUCN-SSC website, Sustainable Use and Livelihoods Specialist Group, Orchid Specialist Group, The Conversation (Y3) 5.4 Sharing the results at an international conservation conference (n=2, in Y2, Y3) 5.5 Results (e.g., Policy Brief, PVA analysis) shared via the Orchid IUCN-SSC, including CITES Secretariat, Orchid Specialist Group, Sustainable Use and Livelihoods Group, Medicinal Plants Specialist Group (Y3) 	 5.1 Analysis of Twitter and Facebook metrics (views, engagements) 5.1 List of target influencers engaged 5.2 Copies/links of publications 5.3 Copies/links of publications 5.4 Conference abstracts 5.5 Email copies 	 Provided one of the Greenhood project team members can receive a scholarship to attend such an event during the project period. Mitigation: Previous experience suggests this very is likely We have external funding to attend CITES meetings to share outputs, which is nearly confirmed

5.6 Side-Event at CITES Plants Committee on medicinal orchid trade (Y2/Y3 - depending when meeting is scheduled)	5.6 Participant list of Side Event5.6 Advertisement of side event5.6 Photographs of side-event	
5.7 Courtesy calls to key conservation NGOs in Nepal to highlight new opportunities for orchid-related projects (baseline=0, Y2=2, Y3=3)	5.7 Meeting list	

Annex 3 Standard Measures

As this is our first time completing the report using these new standard measures, we were not completely sure how to do this, especially as many of our outputs did not clearly match the codes. Further guidance and examples would be appreciated. It would also be helpful if this were integrated with the logframe, integrating activities, outputs and measures into a single document.

Table 1 Project Standard Output Measures

Code No.	Description	Gender	Nationality	Year 1 Total	Year 2 Total	Year 3 Total	Total to date	Total planned during the project
1D	Local NTFP harvesters in 1 community trained and supported through 4 months of self-reporting orchid harvest	F/M	Nepalese	0	12	0	0	12
11B	30% increase enforcement actions in CHAL resulting in seizures against large-scale illegal orchid trade	NA	NA	0	3	3	0	6
21B	Article on baseline orchid trade dynamics (Y2) Article on the sustainability of orchid harvest (Y2)	NA	NA	0	2	0	0	2

21C	Papart on Nanal's archidited	E/N4	Nonclass	1	4	7	0	12
210	Report on Nepal's orchid trade dynamics (Y2)	F/M	Nepalese	1	4	7	0	12
	Baseline legal analysis to clarify the legal status of harvesting and trading orchids (Y2)							
	Baseline report characterizing orchid harvesters and their livelihood reliance on orchids (Y2)							
	Draft protocol and resources to trial standardised harvester self- reporting of medicinal orchids (Y1)							
	Analysis and report on orchid harvest dynamics, based on community-based reporting data to help inform sustainability of legal harvest (Y2)							
	Policy brief, "Combating illegal orchid trade in Nepal" based on Output 1 research (Y3)							
	Policy brief, "Trialling the monitoring and exploring sustainable legal orchid harvest to reduce IWT" (Y3)							
	Blogs (n=5) on orchid trade for international platforms (Y3)							
22A	Amount of match funding secured (£) for delivery of project during the period of the IWT Challenge Fund grant	NA	NA					
26A	Workshops with national-level stakeholders on orchid use and conservation (Y1, Y3)	NA	NA	1	1	1	1	3
	1-day workshop with harvesters (n=>100) on harvest rules and potential for self-monitoring (Y2)							
	Workshop with harvesters (n=200) on orchid management and conservation (Y3)							
26B	Side-Event at CITES Plants (Y3) Sharing the results at an international conservation conferences (n=2, in Y2, Y3)	F	NA	0	1	2	0	3
26C	Editorials (n=4) on orchid trade and conservation in leading Nepal newspapers			0	2	2	0	4

Table 2 Publications

Title	Type (e.g. journals, manual, CDs)	Detail (authors, year)	Gender of Lead Author	Nationalit y of Lead Author	Publisher s (name, city)	Available from (e.g. weblink or publisher if not available
	323)					online)

Proceeding: Illegal trade and sustainable use of medicinal orchids of Nepal	Workshop report	Bashyal, R., Paudel, K., Phelps, J. 2021	F	Nepalese	Greenhood Nepal, Kathmand u	Greenhood Nepal
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Checklist for submission

	Check
Is the report less than 10MB? If so, please email to <a href="https://www.lwt.number.n</td><td>Yes</td></tr><tr><td>Is your report more than 10MB? If so, please discuss with <a href=" https:="" td="" www.ncbe.number-nu<=""><td>No</td>	No
Have you included means of verification? You should not submit every project document, but the main outputs and a selection of the others would strengthen the report.	Yes
Do you have hard copies of material you need to submit with the report? If so, please make this clear in the covering email and ensure all material is marked with the project number. However, we would expect that most material will now be electronic.	No
Have you involved your partners in preparation of the report and named the main contributors	Yes
Have you completed the Project Expenditure table fully?	Yes
Do not include claim forms or other communications with this report.	No