

Darwin Initiative Main/Post/D+ Project Half Year Report (due 31st October 2017)

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| Project reference | 23-014 |
| Project title | Improving livestock management for economic-environmental stability in Mesoamerica's Mosquitia |
| Country(ies)/territory(ies) | Nicaragua, Honduras |
| Lead organisation | Wildlife Conservation Society |
| Partner(s) | National University of Agriculture, Honduras (as well as the indigenous governments of Mayangna Sauni Bu, Miskitu Indian Tasbaika Kum, Kipla Sait Tasbaika in Nicaragua, and the leadership of the Federacion Indigena Tawahka Honduras, and the territorial council of Bakinasta and the ladino community of Nueva Esperanza in Honduras) |
| Project leader | John Polisar |
| Report date and number (e.g., HYR3) | HYR2 |
| Project website/blog/social media etc. | |

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

Honduras: Following a one year delay, our partners in the National University of Agriculture have been rapidly catching up and making significant advances on achieving the project targets. In total, 100 farmers are participating in the project. Between May 15 and June 15, 72 diagnostic questionnaires were used to record location and characteristics of farms, livestock management patterns and challenges, forest clearing, human-carnivore conflicts, sources of livestock losses, hunting patterns, and livelihood priorities in five communities (three Miskitu, one Tawahka, one Ladino) in the Tawahka Asangni and Rio Platano Biosphere Reserves. Questionnaires were delivered in conjunction with community-scale workshops analysing the challenges and potential solutions in livestock management. Results of the workshops have been summarized in a report and the results of the questionnaires have been summarized in a detailed analysis. Interventions to improve livestock management systems have been designed at the community level. In August, agroforestry/silvopastoral capacity building workshops were delivered in four communities to 67 people, and materials to improve livestock nutrition were delivered to 68 farms managed by 83 people. Sixty-six conservation agreements were signed with community members, in exchange for technical assistance delivered through workshops and start-up materials, they commit to following recommendations for pasture restoration, tree planting for protein banks and live fences in silvopastoral systems, jaguar-cattle conflict reduction, decrease in forest clearing, and end to hunting game in project areas. In September, seven lines of camera traps were installed leading from the location of improved livestock management systems to forest interior, to establish the mammal baseline. Agroforestry, silvopastoral capacity building efforts and the design and installation of the camera trap studies have been summarized in reports. Two university students conducted additional questionnaires during this period with a particular focus on the recent history and nature of carnivore-livestock conflicts. Establishment of the avian baseline is pending arrival of migratory birds (November through March).

Nicaragua: We have begun to improve domestic animal management with 49 participants, with primary emphases on livestock nutrition (including silvopastoral systems using the protein rich native species *Brosimum alicastrum*), improved pastures, better contained livestock (through fences including live fences), and animal health (veterinarian training and supplies).

In the last six months, the results of the 72 detailed questionnaires conducted in Year 1 have been analysed and summarized. The results of the baseline from the detailed avian sampling conducted in Year 1 adjacent to silvopastoral systems have been statistically analysed multiple ways and, of the 125 species recorded, a small sub-set of indicator species for forest, recovering secondary areas, and open areas have been identified. The camera traps radiating from silvopastoral systems to provide a baseline for mammals have been collected and the images and data with 25 mammal species, including jaguar *Panthera onca* and white-lipped peccary *Tayassu pecari*, have been statistically analysed for differences in composition among land use gradients radiating out from communities. Generally, all of the mammals occurred across all three 2 km concentric bands extending from the communities. Using multivariate analyses, some differences can be detected among low, medium, and high human use areas. Presentations on how to use silvopastoral systems as a tool for biological conservation and birds and mammals as indicators of conservation success will be presented at the University of the Autonomous Regions of the Caribbean Coast of Nicaragua scientific forum October 26-27. In September, expert veterinarian and agronomist training was delivered to 94 people in five communities, with 52 (55%) women participants.

Bi-National: Across both countries, we have collected and analysed socio-economic data from 147 standardized questionnaires across 19 communities and four ethnic groups, that improved livestock management. The questionnaires, which serve as a baseline and help guide interventions, covered family composition, land and farming practices, sources of income, health and economic status and priorities, livestock management and challenges, human-wildlife conflicts, hunting preferences, wildlife trade, and spatial distribution of wildlife. Improved livestock management was initiated in Nicaragua in Year 1 and in Honduras in Year 2. The biological baseline was established in Year 1 in Nicaragua and analysed in the first half of Year 2. The mammal baseline has been initiated in the first half of Year 1 in Honduras, and the avian baseline will be conducted in the second half. To increase impact on the ground and enable future scale-up, we have ensured sampling methods and data collection compatibility across both countries and extensive local involvement. For example, the same data collection sheets have been used for camera trapping in both countries and avian sampling has a standardized protocol. Our field technicians in Nicaragua are all local Miskitu and Mayangna inhabitants. The two primary field technicians in Honduras are Miskitu and Ladino from Mosquitia, both graduates from the National University of Agriculture. Across all of these territories, we work with indigenous leaders. We have initiated analyses of forest cover change over the last 10 years for the project areas; the baseline will be completed before the next report.

Publicity: The field activities and preliminary results from this project have been displayed in presentations that include the following:

Foci of long-term investigations in protected areas in Nicaragua. **National Congress of the Giant Mother Earth of the Nicaraguan Ministry of Environment and Natural Resources**, Volcán Masaya National Park, Nicaragua, 22 April, 2017.

Biodiversity of Bosawas: mammals, birds, and natural forests. **Forum on Conservation of Biological Diversity in Protected Areas. National Agricultural University, Managua**, Nicaragua, May 24, 2017.

Biological Monitoring in Nicaragua. **Regional Mesoamerican Congress Saving the Future of Mesoamerica's Largest Forests and their Inhabitants.** Organization of American States, U.S. Fish and Wildlife Service, Wildlife Conservation Society, Petén, Guatemala, 11-14 July 2017.

Four presentations in Scientific Week, University of the Autonomous Regions of the Caribbean Coast of Nicaragua, October 26-27, Siuna, Nicaragua

2a. Give details of any notable problems or unexpected developments/lessons learnt that the project has encountered over the last 6 months. Explain what impact these could have on the project and whether the changes will affect the budget and timetable of project activities.

During the last six months, the bi-national project area was impacted by several serious storms, including tropical storm Harvey, tropical storm Nate, and others. As these are remote areas with rustic conditions, some communities already have no electricity and no telephone service, and conditions were complicated by flooding. Despite weather conditions out of our control, the project has been steadily advancing on goals with a high degree of local enthusiasm and involvement.

During year 1, our partners in Honduras experienced a series of delays, including student strikes, administrative delays and other factors. However, they are now progressing well, systems have been installed, biodiversity evaluations are initiated and will run from this month through the winter. Following the suggestion of the Darwin annual report reviewer, we are submitting a request for a one-year, no cost extension. Please reference the request for more details. In summary, due to initial delays and restraints on timing of activities, such as seasonality of bird migration, and constraints on the time required to improve pasture and agroforestry systems, an extension will be beneficial in meeting project objectives and targets.

Additionally, as explained the above-mentioned change request, although the number of direct beneficiaries is slightly reduced to 130, we significantly expanded the number of communities and the area impacted, which will increase the overall biodiversity and conservation agreement output targets of the project. With conservation objectives in mind, we expanded the area of community-managed forests positively impacted by sevenfold, from the proposed 40,000 hectares to a current project area of 280,000 hectares, which was achieved through mutually beneficial territorial conservation agreements. We also increased the number of communities positively impacted from the proposed target of seven to 19, which is a 271% increase. Collectively, these factors will set the stage to ensure significant positive impacts on biodiversity.

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

Discussed with LTS: Yes/No

Formal change request submitted: Yes/No

Received confirmation of change acceptance Yes/No

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

Yes No Estimated underspend: £

(Based on change request amounts)

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

If you anticipate a significant underspend because of justifiable changes within the project, please submit a rebudget Change Request as soon as possible. There is no guarantee that Defra will agree a rebudget so please ensure you have enough time to make appropriate changes if necessary.

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

If you were asked to provide a response to this year's annual report review with your next half year report, please attach your response to this document. Additionally, if you were funded under R23 and asked to provide further information by your first half year report, please attach your response as a separate document.

Please note: Any planned modifications to your project schedule/workplan can be discussed in this report but **should also** be raised with LTS International through a Change Request.

Please send your **completed report by email** to Eilidh Young at Darwin-Projects@ltsi.co.uk . The report should be between 2-3 pages maximum. **Please state your project reference number in the header of your email message e.g. Subject: 22-035 Darwin Half Year Report**