



Department
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Darwin Initiative Main: Final Report

To be completed with reference to the “Project Reporting Information Note”:
(<https://www.darwininitiative.org.uk/resources/information-notes/>).

It is expected that this report will be a **maximum of 20 pages** in length, excluding annexes.

Submission Deadline: no later than 3 months after agreed end date.

Submit to: BCF-Reports@niras.com including your project ref in the subject line.

Darwin Initiative Project Information

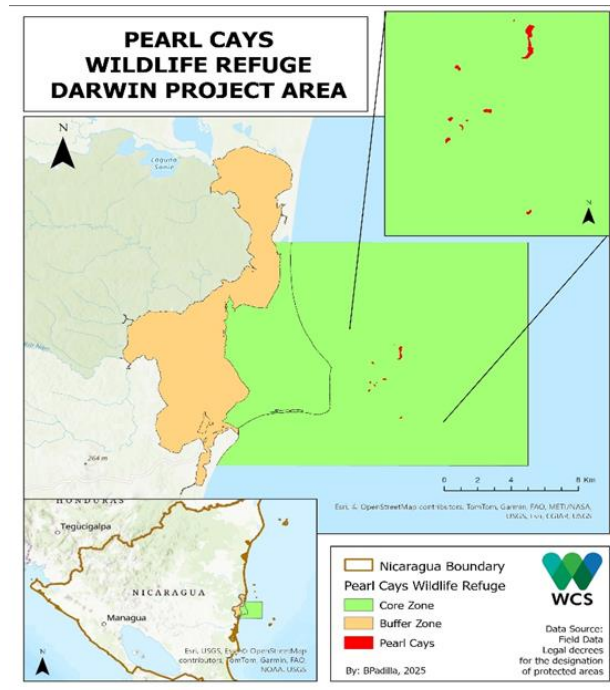
Project reference	29-010
Project title	“Community conservation of critically endangered Hawksbill turtles in Nicaragua.”
Country(ies)	Nicaragua
Lead Organisation	WCS
Project partner(s)	5 fishing communities of the Pearl Lagoon basin
Darwin Initiative grant value	396,930.00
Start/end dates of project	01 June 2022 – 28 February 2025 (2 years 9 months)
Project Leader name	Karen Marie Joseph Sequeira
Project website/blog/social media	www.wcs.org
Report author(s) and date	Karen Joseph and Ashanda Allen

Our project partnered with five key fishing communities to improve sustainable livelihoods and protect hawksbill turtle nesting and foraging areas. Over the past 10 years, WCS and local communities have successfully protected 8,214 nests and 616,847 hatchlings—an essential contribution to the species' survival. And the support from Darwin through this initiative has been fundamental to continue this work despite several crisis occurred in Nicaragua during the last years.

Our ecosystem-based approach focused on marine habitats (seagrass beds, coral reefs, and subtidal zones) and shorelines. We implemented three main conservation strategies: land and water management, species protection, and livelihood incentives. The project addressed two primary threats: biological resource use (e.g., hunting, gathering, logging, and fishing) and natural system modifications (e.g., fires and dams).

The Pearl Cays, an archipelago off Nicaragua's Caribbean coast, host the largest remaining hawksbill turtle nesting population in the west-central Caribbean. This critically endangered species faces severe threats from overexploitation, habitat degradation, and poaching. WCS has collaborated with local communities and authorities to achieve a 92% annual nest protection rate.

The 2018 political crisis in Nicaragua disrupted the growing tourism sector, severely affecting coastal communities that depended on turtle-based ecotourism. Kabu Tours, a community enterprise founded in 2010, had generated income for 10 families and supported others in Kahkabila. However, plans to scale the initiative in 2019 were derailed by the COVID-19 pandemic and two major hurricanes—ETA and IOTA—in early 2020. These events further impacted the local economy, halting tourism and diverting government resources. With reduced market demand, many families turned to the ocean for food and income.



Despite ongoing global challenges and limited tourism, our project continued to protect turtle nests and strengthen alternative livelihoods. Ocean Tours (formerly Kabu Tours) shifted its focus to commercial transport, while the animal husbandry program increased local access to food and protein, benefiting all five partner communities. WCS will continue educating future generations, supporting tourism and food production, and launching a secure online donation platform to fund community patrols and environmental education.

1.1 Project Partnerships

WCS raised awareness, strengthened conservation, supported local food production, and developed sustainable livelihoods, building resilience for humans and turtles in the PCWR.

In 2022, WCS partnered with local governments and signed agreements with four beneficiary communities and the territorial government (See attachments 1, 2, 3, 4, 5 signed letters of agreement WCS-Local government). In 2024, WCS renewed a five-year agreement with the Indigenous and Afro-descendant Territorial Government of the Pearl Lagoon Basin. This agreement reaffirmed the project's success and the territory's need for natural resource protection. Knowledge gained from the Nicaragua-Honduras program, monitoring, patrolling, and sustainable livelihood activities, was transferred to local communities, Indigenous leaders, universities, governments, and enforcement authorities. Thanks to this collaboration, the navy successfully released captured turtles, and hawksbill marine turtle nesting protection from poaching was maintained with over 92% success.

This final report was prepared solely by WCS staff. We believe our partners will continue their relationship with us. A collaboration and coordination agreement signed in October 2024 involves and represents the 12 communities of the Pearl Lagoon basin. *See attachment 6. Document new letter of agreement.*

1 Project achievements:

1.2 Outputs

By 2024, hawksbill turtle nesting populations in the Pearl Cays show a stable increase of at least 10% of new nesting females and 10% in returning females in comparison to the 2022 baseline.

Increase in number of nests:

No.	Year	No. of nests	% increase in number of nest	Average estimated nesting female (4 nests per female)
1	2022	782		196 nesting females
2	2023	894	14.32%	224
3	2024	931	4.14 %	233

Comparing results from 2022 (the beginning of the project) with 2024 (the end of the project), we observed a 19.05% increase in the number of nests, 9% more than the initial proposal. Additionally, there was a 18.87% increase in the number of nesting females, exceeding the initial proposal by 8.87%. In general, the average of nesting female for the 3 year is approximately 218 females. Where % increase= $((Y2-Y1) / Y1) * 100$

1.2.1.1 Increase in returning female- Nests and Eggs (hatchling success rate:

No.	Year	No. of nests	No. Of eggs	Success hatchling	% success
1	2022	782	61,455	38,004	61.84%
2	2023	894	97453	62,133	63.76%
3	2024	931	115,026	69,362	60.30%

Over the three years, there is a noticeable upward trend in the number of nests and eggs recorded. Hatching Success Rate: Although the hatchling success rate peaked in 2023 at 63.76%, it remained relatively stable, fluctuating slightly over the period. This data indicates that while the overall reproductive output (nests and eggs) increased, the hatchling success rate remained consistently around 60-64% across the years. Comparing data between 2022 and 2024, there was a significant increase of 55.03% of new hatchlings based on the 50% empty eggshells.

Success%= (success Hatchling/Total egg count) *100

1.2.1.2 Patrolling and quantifying nesting activity in the PCWR

1.2.1.2.1 All cays (9 cays) with nesting beach in the PCWR were monitored seasonally during the whole life project from the months of May until December of each year (2022 to 2024).

During the project period from June 2022 to December 2024, the team surveyed 7– 8 cays per day of the 10 cays, resulting in a total of 3,569 cay surveys, ranging between 5 to 9 hours daily.

One (1) nest was discovered on Maria Crowcam Cay, an area not typically used for turtle nesting. This makes up 10 surveyed cays. Consequently, the nest found on MC cay was relocated to Baboon Cay.

1.2.1.3 Carry out analysis of field collected data

The team recorded a total of 2,607 nests containing 264,920 eggs, from which 164,195 hatchlings successfully reached the sea, resulting in an overall hatching success rate of 61.97%. Additionally, the team excavated approximately 2,221 nests and relocated 372 nests, moving a total of 51,141 eggs. The relocated nests achieved a hatching success rate of 45.92%, based on the 50% empty eggshell. See *attachment 7, 8 and 9 - Hawksbill Turtle annual report 2022,2023 and 2024*.

1.2.1.4 Carry out tagging of newfound turtles and record returning females.

The team received annual training on measuring and tagging turtles, led by the marine coordinator and supported by a former turtle monitoring member with 10 years of experience at WCS, Byron Blandon. The training incorporates instructional videos from the NOAA website and practical, hands-on experience, in 2023 we carried out the training with a live turtle given by local fishers. After the training session, the turtle was tagged, measured, weighed, and then released back into the wild.

A total of 27 turtles were attended by the team—24 females and 3 males. Among these, 22 new turtles were tagged using metal flipper tags during the project (2022-2024). For other turtles that already had tags, the team measured, weighed, and removed barnacles, so there was no need for re-tagging. See *attachment 10*.

2.1.1.1 Students and key stakeholders in PCWR have increased knowledge of hawksbill turtle protection and conservation through participation in field trips and workshops

By 2024 1,500 (50% female) pupils in primary and secondary schools in 4 communities and 200 (50% female) university students are reached with conservation outreach and environmental

1.2.1.4.1 education activities

Pupils and university students participated in educational activities such as training sessions and workshops focused on sea turtle conservation and protection.

In 2023-2024, a total of 102 presentations were delivered across preschools, primary, and secondary schools in four communities (Haulover, Pearl Lagoon, Awas, and Raitipura), including an additional session at Moravian Secondary School in Bluefields in 2022. The project reached 3,373 students across these areas, representing an increase of 224.86% (or 124.86% more) compared to our initial proposal target. These results clearly surpassed our goal. See *following chart. Attach # 11 and 12 students' assistance list 2022-2024*

Year	Attendees from Primary and secondary, No. Students	% of the proposed Goal of 1500 students
2022	112	7.4%
2023	1645	109.66%
2024	1616	107.73%
	3373.00	

As a result of our educational presentations, an idea emerged to assess student learning through a creative medium: —painting. A contest among participating schools was organized around the topic of World Sea Turtle Day. A kit of painting materials was delivered to each school; each school made a painting from scratch to celebrate World Sea turtle day. The contests took place on June 16, at the auditorium of PLACE in the presence of local authorities and leaders from various municipal institutions such as MIMED, INAFOR, Municipal mayor's office, Firefighter and the Political secretary. All presentations were related to conservation and protection of sea turtles, all presentation used information learned from presentation given from WCS staff in previous visits at schools, the information was captured and reflected in forms of an images by students. See *attachment 13, students' paintings by schools. And attachment # 23 and 24 Video student assessment on field*.

Painting Assessment Criteria: Score Description: Five judges grade each presentation (0–100). The final grade is the mean score, and the highest scoring presentation wins. As a reward, the winning painting is displayed on the wall at the winning school.

The evaluation considered seven criteria: Accuracy of Information (20%), Student Explanation (20%), Clarity & Message Delivery (15%), Creativity & Visual Appeal (15%), Relevance to Theme (10%), Effort & Presentation Quality (10%), and Impact & Effectiveness (10%)—focusing on factual accuracy, communication, creativity, relevance, effort, and audience impact.



As result: The winning school of the canvas painting contest was Andrés Castro Primary School from Haulover community. As a prize, the school received a kit with four cans of paint (blue, yellow, red, and green), a set of paintbrushes, and adhesive tape to help them recreate their artwork on one of the school walls — which they successfully did. See above graph of Student Painting winning contest. Followed by the original painting on canvas.



University and others (leaders and authorities) achievements

Year	University students, leaders and authorities	Proposed goal by 2024
2022	13	
2023	254	
2024	13	
	280	200

Communities' leaders, tourist, University student, primary and secondary teacher and other community members were also part of this process of interaction and awareness through shared education both theoretical and practical. In Addition to the 3,373 primary and secondary students (previous chart), a total of 280 university students and other participants (leaders and authorities) received training workshops between 2022 and 2024. These training activities included joint efforts with BICU University in turtle monitoring, mangrove reforestation, and coastal clean-up in the PCWR.

3.1.2.1.2 Carry out field trips and practical workshops with indigenous leaders, government officers and authorities, to increase technical capacity and awareness on marine turtle protection

A total of 280 university students and leaders, along with 420 community household leaders, participated in workshops and training activities. Additionally, 67 leaders — including representatives from the Territorial Government, Pearl Lagoon Municipal Authorities, and communal leaders — took part in the workshops. Due to the current socio-political situation, direct participation from government officials was not possible. However, communication was established with the Naval Force, who assisted in the release of sea turtles illegally captured during the closed season, following a verbal report coordinated by the marine coordinator. One night - a two days field trip took place in 2023 with primary, secondary and university students through a joint effort with the University of BICU. WCS, approach space and combine a Coastal Cleanup on the Refuge, mangrove reforestation and turtle monitoring. With participation of 4 teachers and 26 students. As result, a video was developed that shows the process, teachers and students' participation. See *attachment # 25 Video fields trip Pearl Cays Refuge*.

3.1.3 Alternative livelihood initiatives are implemented in exchange for hawksbill protection commitments from local communities around the PCWR

3.1.3.1 Hiring of an agricultural extensionist to carry out sustainable livelihood activities with 4 communities.

An agricultural extensionist was contracted (Nov 2022 – Nov 2023) to implement the livelihood project in the Pearl Lagoon basin. His responsibilities included coordination with leaders and authorities, organizing permits, training, workshops, community assemblies, and providing technical assistance. He conducted two baseline surveys (start and end of the project) and delivered reports to WCS. He secured the signing of 4 letters of agreement with beneficiary communities and 1 with the Territorial Government, committing to support sea turtle conservation in exchange for livelihood support.

3.1.3.2 Field trip to socialize and discuss sustainable livelihood activities with local communities and reach an agreement on the parameters to benefit families: female head of households, fishers working in the PCWR, others to be determined in conjunction with local leaders.

The process of Free, Prior and Informed Consent (FPIC) was undertaken in coordination with the Territorial Government. Agriculture extensionist carried out meetings to discuss all activities that took place in the proposed communities. Interinstitutional visits, meetings and communal assemblies took place with the presence of WCS marine coordinator. Meetings were held in accordance with a time-structured agenda, coordinated around the availability of local authorities. A five-step process was undertaken to ensure success, as follows:

A full presentation of the project was delivered to four community leaders and the territorial authorities.

- Communal assemblies were convened to discuss the conservation agreements concerning the Hawksbill Turtle within the PCWLR.
- The pre-selection of project beneficiaries was also addressed at various stages and times, in dialogue with both territorial and communal leaders.
- Assemblies and workshops were held in the respective beneficiary communities.
- This process served to strengthen coordination among key stakeholders, including the territorial government, communal governments, the municipal mayor's office, and WCS. A preliminary list of beneficiaries was submitted by the stakeholders to the communal government for review and endorsement. Each communal government then selected the final beneficiaries from the approved list.

3.1.3.3 Field trip to negotiate and sign conservation agreements within 4 target communities.

Field trips were conducted prior to project implementation by the agricultural extensionist and WCS marine coordinator. Dialogues with key actors, including communal government and the Pearl Lagoon Territory president, with the objective to introduce the project and highlighted the hawksbill turtle monitoring program's importance. These actions help us gathered information base on community perceptions on conservation. Leaders from the four communities and the territorial government expressed support, requesting adherence to internal regulations. A draft conservation agreement was prepared, reviewed by WCS and community leaders, and

presented for approval in community assemblies. Ultimately, five letters of agreement were signed — one per community (Awass, Raitipura, Haulover, Pearl Lagoon) and one from the Territorial Government.

3.1.3.4 Acquisition of certified seeds of staple food and submission of them according to agreed quantities per family.

The agriculture extensionist provided a list of suppliers to WCS's technical and administrative staff. Analysis of seed acquisition suppliers: three national providers were identified: INTA, HORTECO, and SERVIAGRO. INTA and SERVIAGRO are located on Nicaragua's Pacific coast. The final purchase was based on quality, price, and accessibility.

Improved seeds were ordered 6 months before they receive the benefit. All products were delivered to beneficiaries according to timing. Beans, rice, and plantain corms were delivered in the month of December in 2022 based on the list provided by the communal government.

A total of 15,780 plantain corms, 50 qq (qq=100 lbs) of rice, and 50 qq of beans were distributed between 329 families, giving direct benefits to 1,645 people approximately with seed to plant. (see attachments# 14, List of beneficiaries of seeds and plantain corms. And attachment #15 report and pictures that evidence distribution of seeds and plantain corms

3.1.3.5 Technical advice and follow-up visits were provided to producers to supervise crop progress and ensure the success of their harvests.

Collaboration among agriculture extensionist, WCS, local community leaders and the Territorial Government was done. All beneficiaries received training, technical advice and workshops on agricultural product management. The extensionist visited families to observe the progress of the project benefits and their impact. Beneficiaries demonstrated an understanding of product management and pest control. Training, follow-up, and technical assistance ensured beneficiaries received resources and knowledge for long-term success.

Families successfully harvested crops, preserved seeds, and shared them with others, fostering collaboration and mutual support. The project led to visible improvements in their lives, including increased food security and economic stability. Families expressed gratitude for the seeds and plantain corms provided. *See attachment 16 technical assistance by extensionist.*

3.1.3.6 Acquisition of hens and distribution, according to workplan, and conducted practical training workshops on hen's husbandry techniques, and follow up.

The agriculture extensionist successfully complied with the livelihood project at 100%. The project surpassed targets, benefiting 420 families (61.9% more than the initial goal of 260). Beneficiaries were 60% female and 40% male. 100% of poultry (laying hens and roosters) were distributed to 91 women, recognized as community caretakers. Seeds and plantain corms were distributed to 329 families (132 women, 197 men). Reached a total of 223 female beneficiaries, representing 85.76% of the planned female target. Distributions took place in the communities of Awass, Raitipura, and Haulover, with lists provided by community leaders and approved by the Territorial Government. For distribution all beneficiaries signed assistance lists with ID verification. *See attached document # 17, list of beneficiaries who received chickens during the project.*

A follow-up survey was conducted one year later to assess continued use and project impact; this was done by WCS technical assistant. See attached document # 18 field technical assistance with list.

Coordination for acquiring hens and roosters began in mid-2022, three national providers were identified by the agriculture extensionist: SERVIAGRO VF, GRANJA MILI AND AGROSERVIC ZARATE. Specification was requested by anticipations such as chicken and roosters to be a specific breed, and have specific age, with updated vaccinations, the F1 rooster should maintain a certain percentage of Genetic Improvement offspring and suitable for rural areas with diverse climate to guarantee the survival in the region. The distribution was made in June 2023. A total 364 laying hens, 91 roosters, and 25 qq of chicken food were acquired to accomplish the final distribution. Beneficiaries: 91 female household leaders, received 1 rooster, 4 laying hens of the HI-line breed, and 2 types of chicken food. The project Provided direct benefits to 455 people

approximately additionally to the 1,645 people who had already received improved seeds to plant.

They also received training on managing and raising chickens by the agriculture extensionist through follow up visits and workshops. Workshops covered topics like managing laying hens, treatments, and vaccination schedules. The laying hen species was Hi-Line Brown, and the rooster was F1 breed. Chickens were received and delivered at 16 weeks of age, weighing between 1200 and 1500 grams. They received the appropriate vaccines, including Newcastle and Newcastle Oleosa against bronchitis, Gumboro Coryza, and Smallpox. See attachment 4-5 hens training and technical specification.

3.1.3.7 Design and carrying out a socioeconomic survey among local communities (baseline) and carry out a second survey. By the end of the project.

We successfully achieved this target in 2023, two socioeconomic surveys among local community were carried out by the agriculture extensionist (base lines). See attachments 19 and 20 - 1st and 2nd base line.

3.1.3.8 Data analysis of socioeconomic survey

Two baselines were conducted, one at the beginning and the other at the end of the livelihood project.

The Pearl Lagoon territory covers 3,876.13 km² with a population of 30,516 approximately. Home to Mestizos, Miskito, Creoles, and Garifuna. Of the total population, 4,882 live in urban areas. The territory relies primarily on fishing and agriculture, supported by the region's rich marine biodiversity. The twelve indigenous and Afro-descendant communities are mainly located along the coast, depending on these resources for consumption and trade. however, they face challenges in sustainable development, environmental conservation, and infrastructure improvement, all essential for balanced economic growth.

Existing information for each study site was collected by the agriculture extensionist, reviewed, and analyzed. Semi-structured interviews and a predefined guide were carried out with key actors identified through stakeholder mapping. Gender equity and the inclusion of vulnerable groups in the project were prioritized in respondent selection. Interviews focused on four key areas:

1. Socioeconomic conditions of the communities.
2. Fisheries practices and resource use strategies.
3. Agriculture practices and resource management.
4. Sea Turtle Conservation efforts, values, and strategies.

Interviews featured open and semi-structured questions for in-depth discussion. Most respondents were key decision-makers, including delegates, political secretaries, territorial and communal presidents, managers, and advisors responsible for policy implementation, natural resource management, and development project coordination.

Results of the Socio-economic survey

1. Access to toilet services:

Toilet Service Type	First Baseline (%)	Second Baseline (%)	Change (%)
Indoor toilet with septic	67.0	56.7	▼ Decrease of 10.3
Private dry toilet	17.5	20.2	▲ Increase of 2.7
Shared dry toilet (with neighbours)	2.7	2.7	No change
Excavated latrines	12.5	18.7	▲ Increase of 6.2

2. **Access to water:** both baselines show that 100% of those interviewed express that there is a potable water system in their communities but in malfunction. They obtain drinking water for personal hygiene from rain and ground water; in some case some families buy purified water.
3. **Access to electricity:** Both baseline, 100% expressed they have electricity through a Nacional Interconnected system.
4. **Communication:** A 100% has access to a cell phone considered as one of main device widely used means of communication. First baseline shows that only 20% has access to internet or Wi-Fi, the second baseline says that 100% of families have access.

5. **Waste management:** The 100% interviewed expressed that they burn their waste at home, some buried it in their yard. Families who live at the coast express that they use the burned garbage to refill and recover land at the water edge. Families who live in the urban area say they make use of the municipal garbage collector and dump.
6. **Transportation:** They use aquatic and terrestrial commercial transportations, and some have private transportation, this remains for both baselines. In the case of fishers: 90% of the fishers express that they are owners of their boat (canoes and pangas-skiff).
7. **Economic activity:** Both baseline assessments clearly indicate that families in these communities primarily depend on two main income-generating activities—fishery and agriculture. In addition to these core sectors, many households diversify their income streams by engaging in various small business ventures.

The data also shows that across the four communities—Awat, Raitipura, Hauover, and Pearl Lagoon that their economic activities as mentioned before are primarily based on fishing and agriculture but often combined with small businesses or product sales. In Awat, "fish and agriculture" dominates with 60%, while in Raitipura, all respondents (100%) depend on this combination. Hauover shows more diversity, with 52% in "fish and agriculture" and 36% in pure agriculture. Pearl Lagoon is the most economically diverse, with various combinations including agriculture, small business, food sales, bars, and charcoal sales. The economic activity patterns remained consistent between the first and second baseline measurements.

8. **Turtle conservation:** The initial baseline revealed that 60% of respondents were unaware of the Turtle Monitoring Program in Pearl Lagoon. In second survey after activities were carried out, 100% of respondents confirmed awareness of the program.

Nest Poaching: Both baselines show that 100% of families disapprove of nest poaching and the killing of hawksbill turtles for their shells.

9. **Economical access:** In the first baseline survey, respondents reported a lack of access to financial resources, including credit, savings, and formal lending systems. By the second survey, families gained access to private credit systems like Credi Fácil and PRODESA, but high interest rates limit their ability to improve livelihoods. The absence of banks, local lenders, and capital savings remains unchanged. Unfortunately, these are economic conditions beyond project's reach.

3.1.3.9 Improve livelihoods for 8 people hired as community patrollers, benefiting indirectly 40 people based on an average household size of 5 people.

This was 100% success, during the life of the project 2022 until 2024 season, eight patrollers were hired annually to carry out turtle monitoring activities within the PCMPA. Beyond their direct involvement, these patrollers also serve as primary providers for their households, directly benefiting 5 to 6 members per family.

3.1.3.10 Reactivation of Kabu Tours community Enterprise, as a co-finance activity, leading to employment opportunities and opportunities to raise awareness on marine turtle conservation through tourism.

During the implementation of the project, Kabu Tours changed its registration name to Ocean Tours and has since renewed its activities. However, according to the cooperative representative, tourism is no longer feasible or profitable for the tour enterprise, as only a few tourists visit the area and request their services. As a result, this situation has led the cooperative to shift its focus to fishing for fish, shrimp, and crab, as well as its use for community commercial transportation from Kahkabila to Pearl Lagoon and vice versa. See attached letter from Kabu tour-Ocean Tours

1.3 Outcome

Hawksbill turtle population size increased and historical nesting grounds were conserved in the Pearl Cays Wildlife Refuge (PCWR) through community conservation, education, and investments in economic alternatives to turtle exploitation.

Based on the results obtained from our proposed outputs, we can confidently confirm that the project was a success, achieving 96.66% of its objectives. Each output surpassed its goals in some cases.

Two outputs did not reach 100% compliance due to external circumstances. These were:

1. Reaching out to the number of official organizations, such as the Navy and Police, with training workshops and 2. The community enterprise Kabu Tours. Initially, the cooperative focused on tourism under the name Kabu Tour. However, it changed its name to Ocean Tour and adapted to offering commercial transportation services between Kahkabila and Pearl Lagoon. Despite these changes, the cooperative continued to operate and benefit its members and the community. Instead of viewing this as a failure, it would be more appropriate to consider it as a strategic adaptation and resilience upon the circumstances.

1.4 Monitoring of assumptions

Fishing community members continue supporting the project.

This assumption keeps its validity. The community has consistently shown its interest and support for the project year after year. Additionally, the local government has endorsed the initiative, recognizing its significant role in poverty alleviation.

Local authorities in Nicaragua continue supporting the project.

Despite delays in obtaining government permits for field activities during the project's implementation, we successfully navigated these challenges and completed our annual monitoring activities for the 2022-2024 seasons. We received strong support from municipal institutional authorities for educational initiatives, as well as from local and territorial governments, who assisted us in overcoming Central Government hurdles related to permit issuance. Furthermore, we signed a second Letter of Agreement with the Territorial Government, formalizing coordination and support for future projects in the Pearl Lagoon Territory of the Pearl Lagoon Basin. This document was officially signed on October 30, 2024. Given these developments, we can confidently affirm that this assumption remains valid based on the letter of agreement between WCS and territorial government.

Patrolling system is correctly implemented, and community patrollers can detect, retain, and tag/release nesting females in a systematic and accurate way.

The patrol system was effectively implemented. Through the implemented patrolling system, we were able to input information into the database. *See attachment #10 tagged turtle data base.*

Students and key stakeholders attend workshops, talks, and participate in field trips.

Students have participated every year in field trips, talks and workshops. This activity remains valid:

For year 1= 125 students - Year 2 = 1899 students - Year 3 = 1,629 students

Covid situation enables projects to carry out in-person meetings and gatherings

COVID restrictions have been lifted since 2022, we were able to carry out the meetings, workshops and other gathering activities in person.

Benefited families provide accurate information to interviewers during field data collection.

The families who benefited from the project provided accurate information to interviewers during field data collection. Two socioeconomic surveys were conducted by the agricultural extensionist—one at the beginning of the project and another at its conclusion. Additionally, a rapid assessment survey was carried out by WCS technical staff in 2024. This assumption remains valid.

Survey data is correctly processed and reflects accurately People's answers

A 2nd baseline document was done successfully by the consultant and delivered to WCS in December 2023. This assumption remains valid.

Climatic variability does not seriously affect nesting grounds and patrols are able to deploy within the cays during the entire nesting season.

Patrols successfully protected nesting beaches, recording 2,607 nests and relocate 372 nests. Climatic conditions, with wind speeds over 13 knots, occasionally delayed sea transportation but not critically, so this assumption remained valid.

National Authorities continue supporting the patrols and act when poachers are identified by community patrollers.

Despite the challenging sociopolitical situation in Nicaragua, local authorities have committed to support the project and signed an agreement with WCS to execute actual and future activities.

Data is correctly and systematically recorded by community patrollers

Each year, before the monitoring season, candidates received theoretical and practical training, followed by a field trip. Annually, 8 candidates from different communities were selected. The 5-day field training ensured they can properly use all field tools (GPS, compass, white stick, measuring tape, record book, etc.). We consider this assumption remains valid.

Students are open to learning and changing their behavior and attitudes towards hawksbill marine turtles.

Communities are more aware of resource protection (result of 2nd baseline), and students are actively involved in the turtle conservation program through creative activities and actions at their home, school, and in their community. Their participation in painting contests and visits to the Pearl Lagoon office reflects increased awareness. Additionally, some children are rejecting turtle meat, indicating the program's positive impact on attitudes and behaviours. This assumption remains valid.

COVID conditions in the country allow WCS to carry out gatherings and meetings with key stakeholders

As restrictions were lifted, we have been able to carry out gatherings and meetings with key stakeholders.

Families accept to release hawksbill turtles', bycatch and stop hunting and selling hawksbill carapaces in exchange for agricultural or small patio animal husbandry inputs. Families attend extensionists training and apply his/her instructions.

The project has successfully reduced sea turtle bycatch, with no killed hawksbill turtles reported. Out of 2,607 recorded nests, 98.01% remained protected. Beneficiaries expressed gratitude for improved food security and income. Many planted and harvested plantain corms provided by the project, and raised poultry, selling eggs and consuming them for protein. Some stored seeds for replanting, ensuring continued harvests. Plantains matured in nine months and are now sold locally. Chicken began laying eggs within a month, with some beneficiaries expanding their flocks. Women established small businesses, increasing financial independence, while more men shifted to farming, reducing turtle hunting and promoting sustainable livelihoods.

Locally improved seeds, adapted for climatic conditions of Pearl Lagoon Basin are available to purchase when needed.

The assumption proved correct. Locally adapted improved seeds, such as beans, rice, and plantain corms, were planted and received by participating families. After harvesting, many used the seeds for self-consumption, sold them locally, or shared them with relatives, reserving some for future planting.

Community members are willing to participate in the project and be hired.

We found enthusiastic people and leaders among the communities eager and participating in the turtle monitoring program. Every year, we had an average of 15-20 candidates from different communities. Unfortunately, only 8 members were selected annually to become patrollers. Our technical assistant is also a member of the community of Haulover. We consider this assumption to be valid.

The sociopolitical and pandemic situation allows visitation to Pearl Cays to continue throughout the year.

This assumption remains valid.

1.5 Impact

The Pearl Cays, an archipelago on Nicaragua's Caribbean coast, was declared a wildlife refuge in 2010 and is home to the largest known hawksbill turtle nesting population in the west-central Caribbean. Once heavily exploited, with 88% of eggs and meat harvested as a survey showed in the year 2000, conservation efforts led by WCS and local communities transformed the area. Through education and community patrolling, over 98% of nests are now protected. From 2000

to 2024, 2,607 nests were recorded with only 1.99% poached—down from 88%—marking a major success for hawksbill turtle conservation for the entire eastern Caribbean region.

Meat consumption and carapace collection have significantly declined thanks to increased surveillance, education, and awareness campaigns. Community leaders, in collaboration with WCS, are actively working to protect resources within the Pearl Cays Wildlife Refuge. This commitment was formalized through a signed letter of agreement in 2022, updated in 2024.

This initiative, strongly oriented towards sustainable livelihoods strengthening, has transformed beneficiary communities, with many families now growing crops and raising chickens as primary sources of income. Women have become merchants, selling products like eggs, chickens, beans, and plantains in local markets. This shift has improved household food security, reduced reliance on turtle hunting, and eased pressure on fishing. Beyond meeting its goals, the project fostered community sharing and cooperation, amplifying its impact. Families' gratitude reflects the project's lasting positive effect on their lives and future opportunities.

The project has improved families' quality of life through both poultry and agriculture. Many beneficiaries now harvest crops, save seeds for future planting, and no longer need to buy plantains or eggs, instead selling surpluses for extra income. This home-based income diversification has been key. While some families lost chickens to flu outbreaks, crop production helped offset losses. Overall, participants expressed satisfaction and suggested future projects focusing on pigs, cattle, or crops like coconuts. No complaints were reported.

2 Contribution to Darwin Initiative Programme Objectives

1.6 Project support to the Conventions, Treaties or Agreements

The project directly supports CBD's Aichi targets 1, 12, 14, 18 and 19, and activities this year have also contributed towards SDG 2: Zero Hunger; SDG 5: Gender equality (although to a lesser extent than planned); and SDG 14: Life below water. Hawksbill turtles are also protected by the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). While the consumption of turtles and their parts is banned in Nicaragua by national law, an exception is made for Indigenous communities of the Caribbean Coast which are entitled to hunt green turtle based on quotas assigned per indigenous territory. The project is also helping enforce Nicaraguan national legislation, specifically Law No.489 on fishing and aquaculture, which has specific directives for the protection of marine turtles. These laws protect the country's biodiversity from pressures that are common to other central American countries.

1.7 Project support for multidimensional poverty reduction

The project was implemented in one of Central America's poorest, most climate-vulnerable regions, where poverty drives turtle poaching. The COVID-pandemic and two hurricanes further reduced food security, pushing communities to hunt hawksbill turtles for protein and income. By providing alternative food sources like seeds, plantains, and chickens, the project helped reduce this pressure. In 2022, 329 families (1,645 people) benefited, and in 2023, 91 women-led households (about 450 people) benefited by receiving chicken and roosters that support for egg and poultry production. Additionally, eight people were employed for turtle monitoring, indirectly benefiting 50 households annually. Conservation agreements strengthened community trust and engagement.

Plantain corms distributed to 329 families in 2022 successfully yielded crops, with plantains sold locally at C\$7–10 (£0.15–0.33) each. Bean seeds also produced successful harvests in 2023, enabling replanting and ongoing production. Each qq of beans sold for C\$3,000–4,000 (£65–86). WCS purchased these products to support field teams in 2023 and 2024, with orders placed for 2025. The project has strengthened the local economy and contributed to conservation success, with 192 more turtle nests recorded between 2022 and 2024.

Key project achievements include protecting 97.96% of endangered hawksbill turtle nests and, for the first time in WCS's work in the Pearl Lagoon Territory, providing beans, rice, plantain corms, chickens, and roosters to 420 families (around 2,100 people).

Strong coordination between WCS, the Territorial Board of the 10 Indigenous and Afro-descendant Communities, and the local government has been established. This collaboration

was formalized with a new agreement in October 2024, committing both parties to strengthen capacity building and jointly manage and conserve the Pearl Cays Wildlife Refuge as a Marine Protected Area.

1.8 Gender Equality and Social Inclusion (GESI)

Please quantify the proportion of women on the Project Board ¹ .	132 women received seeds to plant (rice, beans and plantain corms) and 91 beneficiaries 100% women received yard animals such as laying hens and rooster from the Hy-line Brown) distributed between 4 different communities (Awas, Raitipura, Pearl lagoon and Haulover)
Please quantify the proportion of project partners that are led by women, or which have a senior leadership team consisting of at least 50% women ² .	<p>The target project was 260 families (60% women and 40% men), we have 420 families attended, 160 families more than what the project projected. Based on our projection, we have reached 53.10% women.</p> <p>For our patrol team, this varied yearly, and it depend on applications, in 2022 and 2023 we had 38% women as patrollers, but in 2024 this reduce to a 25%. We assume that this situation happens because of the work require 100% time out to sea which is a limitation for female to apply. in 2023 we had are women (3 out 8).</p> <p>Although team leadership for patrolling represent 50% women.</p>

GESI Scale	Description	Put X where you think your project is on the scale
Not yet sensitive	The GESI context may have been considered but the project isn't quite meeting the requirements of a 'sensitive' approach	
Sensitive	The GESI context has been considered, and project activities take this into account in their design and implementation. The project addresses basic needs and vulnerabilities of women and marginalised groups, and the project will not contribute to or create further inequalities.	X
Empowering	The project has all the characteristics of a 'sensitive' approach whilst also increasing equal access to assets, resources and capabilities for women and marginalised groups	X

¹ A Project Board has overall authority for the project, is accountable for its success or failure, and supports the senior project manager to successfully deliver the project.

² Partners that have formal governance role in the project, and a formal relationship with the project that may involve staff costs and/or budget management responsibilities.

Transformative	The project has all the characteristics of an 'empowering' approach whilst also addressing unequal power relationships and seeking institutional and societal change	
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1.9 Transfer of knowledge

Sharing knowledge is essential for development. Through the livelihoods project, beneficiaries received training that will benefit them beyond the project. Learning improved seed management and poultry rearing expanded their skills. Some beneficiaries successfully crossbred improved hens with native ones, producing more resilient animals. This innovation led to increased offspring, higher profits, and greater income for families who fully embraced the project's opportunities.

The knowledge gained enabled beneficiaries not only to improve crossbreeding and increase hatchlings but also to consume chicken eggs, reducing reliance on turtle meat, and to sell eggs for additional income. Sharing information through workshops, trainings, and school talks with people of diverse backgrounds is challenging but ultimately rewarding. Our project has made this possible, and we believe many more are ready to embrace change and adopt new perspectives.

1.10 Capacity building

No. During this reporting period, no staff from our in-country partners experienced a promotion, nor were they invited to serve on national, regional, or international expert committees or panels. Our project coordinator was invited to participate in an international workshop held in La Ceiba, Honduras, on marine turtle conservation, where she had the opportunity to interact with other peers coordinating similar initiatives across the Central American region.

3 Monitoring and evaluation

Project activities were carried out according to the log frame, with minor delays due to legal issues, successfully resolved by our representatives. Key activities, including beach patrols during nesting season and sustainable livelihood initiatives, delivered strong results: 97.85% of turtle nests were identified within the surveyed cays. The livelihoods project directly benefited around 2,100 people, with a strong focus on gender equality — 50% of team leaders are women.

During nesting season, each patroller records turtle nests with coordinates and protection measures in a logbook. Daily checks ensure nests are not damaged by poaching, animals, or tides. All data is first logged, then entered a database, following a scientifically validated protocol established over a decade ago. Each nest is later excavated to confirm egg counts, hatchlings survivals and released, hatchling mortality, and reasons for unhatched eggs, all recorded for analysis for our Hawksbill annual reports. Please see attachment 7,8 and 9: *Hawksbill annual report 2022, 2023 and 2024*.

To support sustainable livelihoods, consultant reports from two socio-economic baseline surveys include participant lists, beneficiary records, and photographs. The second baseline survey also captures community perceptions of change, while a final report documents seed production and plantain crop harvests (see attached report). There have been no changes to our monitoring and evaluation (M&E) plans. WCS continues to oversee all M&E activities and has shared project results and indicators with community leaders and Kabu Tour through meetings and presentations.

Kabu Tour has officially changed its legal name to Ocean Tours. Although tour demand has been low, the enterprise's president reported completing two trips in 2024, generating a profit in cordobas equivalent of C\$ 8,490.00 which in dollars it was \$249 USD (approximately € 219). Currently, the business operates as a commercial transport service between Kahkabila and Pearl

Lagoon, and they aim to increase tour activity by Easter 2025. During monitoring visits, Ocean Tours has brought tourists to learn about the hawksbill turtle conservation project and has expressed gratitude to Darwin and WCS for their ongoing support. With continued assistance from WCS, Ocean Tours is developing new tour packages for 2025.

4 Lessons learnt

Since 1999, the turtle conservation program has reported steady increases in nesting and reductions in poaching. We work directly with fishers, women, youth, and children under the motto *I DO* to promote conservation. Integrating livelihoods with conservation efforts has been well received, helping reduce poaching and turtle killings. We've learned that providing tools and knowledge through education, communication, and coordination drives real change.

The project has boosted the local economy through the sale of plantains, eggs, and beans. A multidisciplinary and gender-balanced approach was key to successful distribution. Food security has improved for over 400 families through the provision of seeds, chickens, and roosters. Collaboration with universities and the Ministry of Education has helped us exceed outreach goals in hard-to-reach areas.

We reaffirm that educating children is key to securing future resources, influencing adults, and shifting perceptions toward conservation. Our hawksbill conservation project has the potential to become a multidisciplinary program, integrating closely with community livelihoods. By following this approach, the program can gain broader support from authorities and communities, contributing to the recovery of this endangered species. If given the chance, we would do it again — the effort is demanding but essential to ensuring the continued growth of turtle populations.

5 Actions taken in response to Annual Report reviews

We have addressed all the observations made on our annual report. All necessary corrections and updates have been implemented as requested and were reported in our last submission. So far, we have not received any further observations, and we are currently awaiting feedback.

6 Sustainability and Legacy

WCS has been leading the conservation project in Pearl Lagoon since 2000, showing positive results over 24 years of patrolling, strong coordination among resource users and with annual increases in nest numbers. Patrollers, hired from local communities, demonstrate strong capacity for recruitment. Conservation agreements with community leaders and territorial governments, unprecedented in the region, support the project. However, resource limitations and climate change, beyond WCS's control, pose significant challenges. The development of alternative food sources has reduced pressure on marine resources, providing a crucial legacy for sustainability.

7 Darwin Initiative identity

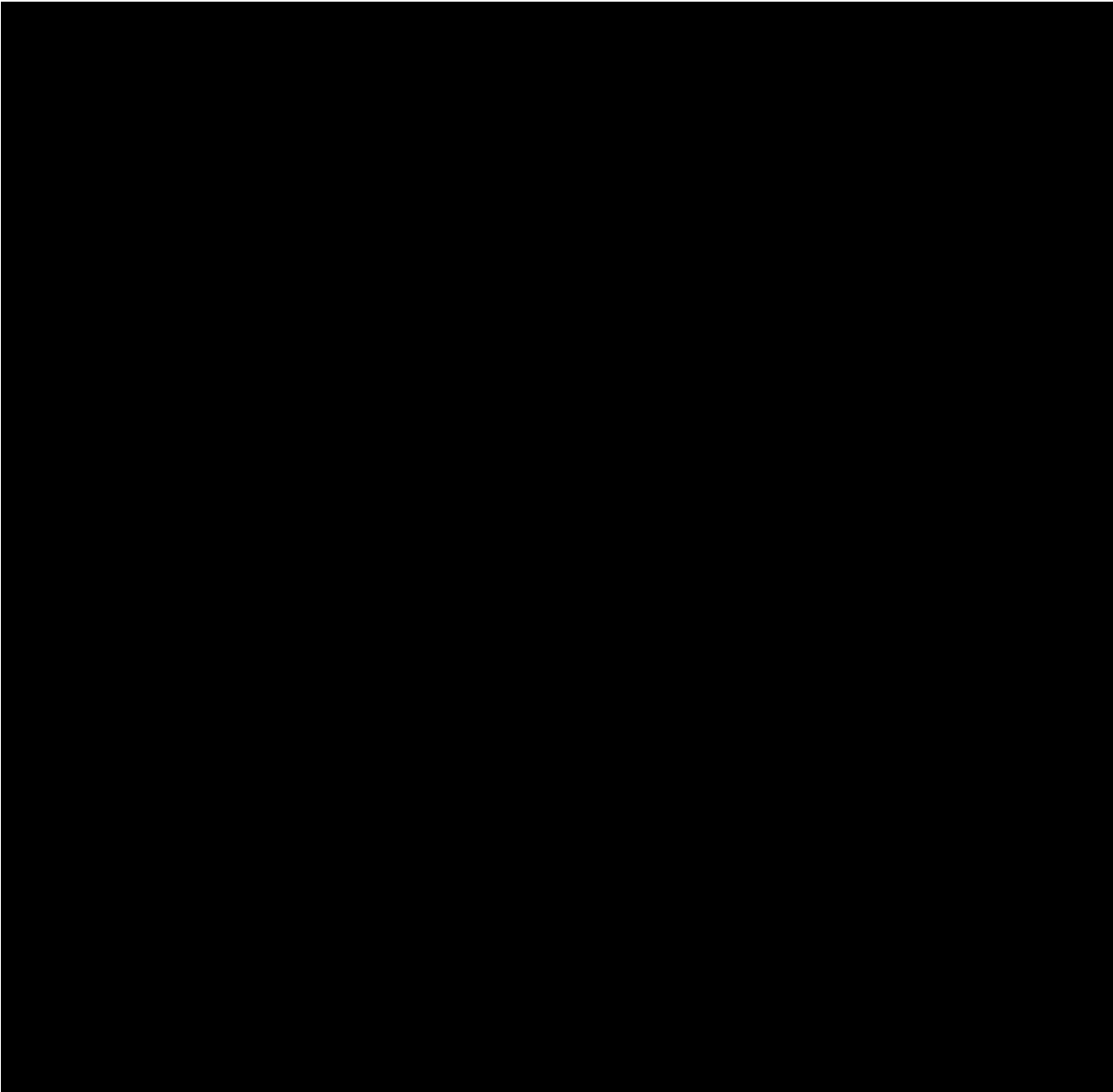
All reports and presentations have featured the Darwin Initiative logo, highlighting their role as our main donor. Collaboration with the Ministry of Education (MINED) and the University of BICU has expanded our education outreach beyond expectations. The Darwin Initiative has also supported livelihood activities and turtle monitoring, sparking interest from other conservation projects. These efforts have led to a combined approach on the ground, integrating mangrove reforestation, coastal clean-up, and turtle monitoring. The project has been well received by local communities, especially direct beneficiaries and authorities. More people are participating in the program's activities and have expressed gratitude, hoping for its expansion to other communities with similar conditions.

8 Risk Management

At the beginning of November 2024, we received notification from the territorial government requesting that we temporarily suspend our activities. They indicated that WCS must formalize

an agreement committing to adhere to their current requirements and enhance the territorial government's involvement in the hiring process.

9 **Safeguarding – esto se lo dejo a ustedes**



10 **Finance and administration**

Project expenditure

Project spend (indicative) since last Annual Report	2024/25 Grant (£)	2024/25 Total actual Darwin Initiative Costs (£)	Variance %	Comments (please explain significant variances)
Staff costs (see below)				
Consultancy costs				
Overhead Costs				

Travel and subsistence				
Operating Costs				
Capital items (see below)				
Others (see below)				
TOTAL	109,981.00	109,981.00		

Staff employed (Name and position)	Cost (£)
Edgard Herrera Scott, Project Lead	
Manuela Salgado; Nicaragua & Honduras Administrator	
Karen Marie Joseph - Nicaragua Marine Coordinator	
Bianca Padilla - SMART Specialist	
Christian Barrientos - Programa Marino Mesoamericano y Oeste d Caribe	
Blanca Espinoza; Nicaragua Administrative Assistant	
Byron Blandon - Nicaragua Security	
Ashanda Allen - Pearl Lagoon Assistant	
TOTAL	

Capital items – description	Capital items – cost (£)
TOTAL	

Other items – description	Other items – cost (£)
Patrolling Tools	
Bank Charges	
Audit costs	
TOTAL	

1.11 Additional funds or in-kind contributions secured

Matched funding leveraged by the partners to deliver the project	Total (£)
Staff Costs	
Consultancy costs	

Overhead costs	
Travel & Subsistence	
Operating costs	
Capital Equipment	
Other costs	
TOTAL	

Total additional finance mobilised for new activities occurring outside of the project, building on evidence, best practices and the project	Total (£)
TOTAL	

1.12 Value for Money

The project frequently surpassed its targets despite significant external challenges. We not only protected 98% of hawksbill turtle nests, significantly boosting nesting populations and hatchling success, but also improved livelihoods for 420 families—61.9% more than the initial goal—providing food security through sustainable agriculture and poultry farming. Educational efforts reached more than twice the planned number of students, significantly amplifying community awareness and stewardship of local resources. Strategic adaptations, like transforming Kabu Tours into Ocean Tours for commercial transport, demonstrate flexibility and effective resource use. These outcomes collectively indicate highly effective and economical management of resources to generate substantial conservation and community benefits.

11 Other comments on progress not covered elsewhere

Our primary challenge was effectively keeping pace with the continually evolving and increasingly stringent government requirements imposed on NGOs operating in Nicaragua. These frequent regulatory updates required significant attention and resources, complicating project implementation timelines and administrative processes.

12 OPTIONAL: Outstanding achievements of your project (300-400 words maximum). This section may be used for publicity purposes.

- 1. Conservation of Critically Endangered Hawksbill Turtles:** Wildlife Conservation Society (WCS) manages to engage and manage to establish strong partnership with five key fishing communities during the 3 years project, it has led to protect, hawksbill turtle nesting and foraging areas. Over the past decade, this initiative has safeguarded 8,214 hawksbill turtle nests and released 616,847 hatchlings, contributing significantly to the species' survival. Additionally, the project has improved sustainable livelihoods by involving local communities in conservation efforts.
- 2. Alternative livelihood:** The Darwin Initiative's livelihood projects executed by WCS in 4 communities of the Pearl Lagoon basin, have provided essential resources to over 400 families (approximately 2,100 people) in the Pearl Lagoon Territory. Support included distributing beans, rice, plantain corms, and poultry for meat and eggs, marking a significant step in enhancing food security, reducing reliance on unsustainable fishing

practices, reducing poverty and improving their economy through the sale and marketing of their crops.

3. **Empowering woman and youth:** Base on a random survey conducted with 12 beneficiary women assessed the progress of the Alternative Livelihood Project. Results have shown the increase in number of laying hens true cross breeding with native chickens, providing other sources of protein and income for local families, especially for women and youth. The project also hired eight patrollers for turtle monitoring activities, during the life of the project, who, beyond their direct involvement, serve as primary providers for their households, benefiting 7 to 8 family members each. WCS has reached out to more than 3,500 students from primary and secondary schools, including university students who attended workshops, schools talk and participated in different activities developed during the project, such as field trip and painting contest. Those children have become conscious about conservation activities and the importance of protecting our environment and its marine resources.

Annex 1 Report of progress and achievements against logframe for the life of the project

Project summary	Progress and achievements
<p>Impact</p> <p>Hawksbill populations in the Pearl Cays are protected by communities with strengthened capacities and sustainable livelihoods aligned with wildlife conservation priorities</p>	<p>The project has shown it impacts in different ways:</p> <ol style="list-style-type: none"> 1. Empowering Stewardship: By building their capacities and securing sustainable livelihoods, communities play a crucial role in improving the monitoring, enforcement, and protection of Hawksbill habitats. This collaborative approach strengthens conservation efforts, ensuring long-term success. Additionally, formal agreements between local authorities and WCS further reinforce commitment and accountability, fostering a cooperative framework for wildlife protection and sustainable resource management. 2. Reduced Resource Pressure: with the delivering of seeds to plants and husbanding animals (chicken), there was a shift from fishing to agriculture activity. The livelihood alternatives alleviate pressures such as poaching or habitat degradation. 3. Enhanced Resilience: a strengthened communities and better equipped, they can adapt to environmental or economic changes, ensuring conservation efforts. 4. Long term Conservation outcomes: WCS has demonstrated long-term success in the area by working hand in hand with local communities. This is evident in the dramatic shift from nearly 100% of nests being poached in the past to nearly 100% of nests now being protected. Integrating community development with wildlife conservation creates a virtuous cycle: as communities benefit from conservation efforts whether through sustainable livelihoods or resource management, their commitment to protecting the environment grows. This ensures a sustainable future for Hawksbill populations in the Pearl Cays.

	In summary, this assumption underpins the project's strategy by suggesting that community empowerment and sustainable livelihoods are key drivers for effective and enduring wildlife conservation.
Outcome Hawksbill turtle population size increased and historical nesting grounds conserved through community conservation, education and investments in economic alternatives to turtle exploitation, in the Pearl Cays Wildlife Refuge (PCWR)	
Outcome indicator 0.1 By 2024, hawksbill turtle nesting populations in the Pearl Cays show stability and increase of at least 10% of new nesting females and 10% in returning females in comparison to the 2022 baseline.	Comparing 2022 until 2024 report, we have had 16% increase in numbers of nests which give a 6% more than our initial proposal, a 16.38% increase of nesting female, a 6.38% increase more than the initial proposal. Also, we had an increase of 55.03% of new hatchling based on the 50% empty eggshells.
Outcome indicator 0.2 By 2024, 90% of targeted students and key stakeholders demonstrate strong understanding (score 85% or higher on post-workshop survey) of hawksbill turtle protection and conservation. Outcome indicator 0.3 By 2024, 80% of targeted families are reporting an increase in food availability from engaging in sustainable livelihoods activities compared to the 2022 baseline.	Post workshops and survey, baseline shoes that 100 % of students and key stakeholders express their appreciation of marine turtle as valuable and unique assets and demonstrate a good understanding of hawksbill protection activities. A 100% of targeted family reported an increase in food availability, it evidently shows that this has been successful, targeted families have managed to increase the number of offspring and, consequently, their profits. Include the planting of seeds and plantain corms, these products have now been selling at local market, WCS have contribute to the buying of some of these products such as beans and plantain for the team while on field. This economic growth has been reflected in an increase in income for families who took full advantage of the project's opportunities.
Output 1 Hawksbill turtle populations in PCWR increase and show stability	

<p>Output indicator 1.1</p> <p>1 By 2024, 9 nesting beaches are protected (verified by number of nests recorded compared to number of nests poached and destroyed by natural means) within the PCWR</p>	<p>A total of 9 nesting beach plus 1, were monitored and protected during the life of the project, giving us 10 monitored beaches. During the life of the project 2022-2024; patrollers manage to record 2,607 nests, out those 52 nests were poached giving a protection of 98.01% of hawksbill turtle. We had a total of 403 nest was wash away because of high tide and 24 nest destroyed by animals such as turtles, birds, rats and dog.</p>
<p>Output indicator 1.2.</p> <p>By Y3, at least 92% of hawksbill turtle nests compared to Y1 data are protected by community patrollers in the PCWR</p> <p>Output indicator 1.3</p> <p>By Y3 of the project average emerging success per nest (based on estimated successfully hatched eggs per nest, per year) is maintained compared to Y1 data</p>	<p>Comparing data of Y3 with Y1. For the first year (Y1) in 2022, 782 nests were reported with 16 poaches for 2.04%, giving a protection of 97.9%. By the end of the project (Y3), in 2024, 931 nests were reported with 20 poached for a 2.1%. giving a protection of 97.85%. Each result shows an excellent protection by surpassing our proposed indicator.</p> <p>In 2022 when project begging we reported 782 nests and in 2024 we reported 931 nests. Comparing data 2022 with 2024, we have had an increase of 16% in numbers of nests which give a 6% more than the initial proposal, also a 16.38% increase of nesting female, a 6.38% increase more than the initial proposal.</p> <p>In 2022 we had counted 615,00 eggs, and an average of 38,004 successful hatchling, giving 61.80% success for Y1. In 2024 we counted 114,476 eggs with a 69,051-hatchling giving 60.31% for Y3. Comparing data between 2022 and 2024, there was a significant increase of 55.03% of new hatchling based on the 50% empty eggshells. And compare number of nest of 2022 and 2024, we had an increase in number of nests with a 46.27%, and 44.96% increase in hatchling.</p>
<p>Output 2.</p> <p>Students and key stakeholders in PCWR have increased knowledge of hawksbill turtle protection and conservation though participation in field trips and workshops</p>	
<p>Output indicator</p> <p>2.1.</p> <p>By 2024 1,500 (50% female) pupils in primary and secondary schools in 4 communities and 200 (50% female) university students are reached with conservation outreach and environmental education activities</p>	<p>During the life of the project, 3,373 students from beneficiary communities, include one school from the city of Bluefields attended workshops about conservation outreach, this number equivalent to 224.86% more than our prime indicator. A total 280 university students and other participants (teacher, tourist, and community</p>

	<p>leaders and authorities) also was part of this process. Evidently these results surpassed our goal.</p>
<p>Output indicator</p> <p>2.2.</p> <p>By 2024 90 (40 % female) Indigenous leaders, 30 (50% female) Government Officers and 60 enforcement officers (military) have increased technical capacity and awareness on marine turtle protection</p>	<p>A total of 43 Indigenous leaders from four communities, including the territorial government, participated, with 77.7% being male and 22.3% female. The lower-than-expected percentage of female participants was beyond our control, as community leaders are elected by their members and had already been chosen before the project began.</p> <p>Additionally, no military or police officers were trained due to political constraints, which were beyond our reach.</p> <p>This output did not reach its expectation, although</p>
<p>Output 3.</p> <p>Alternative livelihood initiatives are implemented in exchange for hawksbill protection commitments from local communities around the PCWR. Students and key stakeholders in PCWR have increased knowledge of hawksbill turtle protection and conservation through participation in field trips and workshops.</p>	
<p>Output indicator 3.1 By 2024, conservation agreements are signed in 4 target communities around the PCWR benefiting 260 families</p>	<p>Four (4) letters of agreement were signed—one by each community—along with an additional letter signed by the territorial government in 2023, in which community members committed to supporting the turtle conservation project in the Pearl Lagoon Basin.</p> <p>In 2024, another letter of agreement was signed by the territorial government, reaffirming their commitment to the WCS project as a whole in Pearl Lagoon.</p>
<p>Output indicator 3.2 By end of project, 260 families (60% female head of household) are benefitting from agricultural or domestic animal husbandry project inputs</p>	

	<p>The project directly benefited 420 families—61.9% more than the proposed goal of 260 household leaders. The distribution was carried out in two stages: Stage 1: Seeds and plantain corms were delivered to 329 beneficiaries, including 132 females (40.12%) and 197 males (59.88%). Stage 2: Domestic animal husbandry items (hens and roosters) were distributed, with all beneficiaries in this stage being 100% female.</p>
Output indicator 3.3 Improve livelihoods for 8 people hired as community patrollers, benefiting indirectly 40 people based on an average household size of 5 people.	<p>Eight (8) patrollers were hired annually to carry out turtle monitoring activities within PCMPA. Beyond their direct involvement, these patrollers also serve as primary providers for their households, directly benefiting 5 to 6 family members. Each one.</p>
Output indicator 3.4 By 2023, Kabu Tours is operational and employing 20 (20% female) community members, benefitting an estimated 100 people (5 members per community member family)	<p>A fiscal sponsor was contracted to support the development of the Kabu Tour project. All materials and equipment needed for its reactivation were purchased. Since Kabu Tour had been inactive for over a year, it lost its status and was re-registered under the new name, Ocean Tours. All legal permits from the communal and territorial governments were successfully obtained until the end of 2023.</p> <p>In 2024, 3 tour trips were conducted; however, no additional tours have been executed due to low tourist demand. To generate income, Ocean Tours plans to offer commercial transportation services between Kahkabila and Pearl Lagoon (and vice versa), which will also serve as a tourism activity. This strategy will enable members to generate foreign currency for themselves and for their community.</p>
Output indicator 3.5 By 2024, Kabu Tours is generating a net annual income of 15,000	<p>So far Kabu tour are not generating the expected income. In 2024 the president express that they earn only C\$8,490.00, equivalent to €219.30.</p>

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

Project summary	SMART Indicators	Means of verification	Important Assumptions
Impact:			
Outcome: Hawksbill turtle population size increased and historical nesting grounds conserved through community conservation, education and investments in economic alternatives to turtle exploitation, in the Pearl Cays Wildlife Refuge (PCWR)	O.1 By 2024, hawksbill turtle nesting populations in the Pearl Cays show stability and an increase of at least 10% of new nesting females and 10% in returning females in comparison to the 2022 baseline	O.1 Nest records from daily monitoring, annual report with pictures, computer database to record and calculate number of new nesting and returning females, total number of nests and clutches, hatching success (% of neonates to exit their eggshells) and emerging success (% of neonates to exit the nest) for each clutch.	O.1.1 Fishing community members continue supporting the project. O.1.2 Local authorities in Nicaragua continue supporting the project. O.1.3 Patrolling system is correctly implemented, and community patrollers are able to detect, retain, and tag/release nesting females in a systematic and accurate way.
	O.2 By 2024, 90% of targeted students and key stakeholders demonstrate strong understanding (score 85% or higher on post-workshop survey) of hawksbill turtle protection and conservation	O.2 Post workshop survey	O.2.1 Students and key stakeholders attend workshops, talks and participates in field trips. O.2.2 Covid situation enables project to carry out in-person meetings and gatherings.
	O.3 By 2024, 80% of targeted families are reporting an increase in food availability from engaging in sustainable livelihoods activities compared to the 2022 baseline	O.3 Socioeconomic Survey	O.3.1 benefited families provide accurate information to interviewers during field data collection. O.3.2 Survey data is correctly processed and reflects accurately people answers

<p>Output 1</p> <p>Hawksbill turtle populations in PCWR increase and show stability</p>	<p>1.1 1.1 By 2024, 9 nesting beaches are protected (verified by number of nests recorded compared to number of nests poached and destroyed by natural means) within the PCWR</p> <p>1.2 By Y3, at least 92% of hawksbill turtle nests compared to Y1 data are protected by community patrollers in the PCWR</p> <p>1.3 By Y3 of the project average emerging success per nest (based on estimated successfully hatched eggs per nest, per year) is maintained compared to Y1 data</p>	<p>1.1 Patrol logbook, annual report, computer database</p> <p>1.2 Nests check book, annual report, computer database</p> <p>1.3 Nest check logbook, computer database</p>	<p>1.1 Climatic variability does not seriously affect nesting grounds and patrols are able to deploy within the cays during the entire nesting season.</p> <p>1.2 National Authorities continue supporting the patrols and act when poachers are identified by community patrollers.</p> <p>1.3 Data is correctly and systematically recorded by community patrollers.</p>
<p>Output 2</p> <p>Students and key stakeholders in PCWR have increased knowledge of hawksbill turtle protection and conservation through participation in field trips and workshops</p>	<p>2.1 By 2024 1,500 (50% female) pupils in primary and secondary schools in 8 communities and 200 (50% female) university students are reached with conservation outreach and environmental education activities</p> <p>2.2 By 2024 90 (40 % female) Indigenous leaders, 30 (50% female) Government Officers and 60 enforcement officers (military) have increased technical capacity and awareness on marine turtle protection</p>	<p>2.1 Field trip and workshop terms of reference, attendance sheets (disaggregated by sex), reports on educational workshops and field trips.</p> <p>2.2 Workshop terms of reference, attendance sheets (disaggregated by sex), reports on workshops</p>	<p>2.1 Students are open to learning and changing their behaviour and attitudes towards hawksbill marine turtles.</p> <p>2.2 COVID conditions in the country allows WCS to carry out gathering and meetings with key stakeholders</p>
<p>Output 3</p> <p>Alternative livelihood initiatives are implemented in exchange for</p>	<p>3.1 By 2024, conservation agreements are signed in 4 target</p>	<p>3.1 Signed conservation agreements.</p>	<p>3.1 Families accept to release hawksbill turtles by catch and to stop hunting and selling of hawksbill</p>

hawksbill protection commitments from local communities around the PCWR	communities around the PCWR benefiting 260 families	3.2 signed lists of benefited families per community	carapaces in exchange for agricultural or small patio animal husbandry inputs. Families attend extensionists training and apply his/her indications
	3.2 By end of project, 260 families (60% female head of household) are benefitting from agricultural or domestic animal husbandry project inputs	3.2 Signed improved seeds, rice, beans, plantain suckers or animals' distribution lists (disaggregated by head of household), pictures and annual report	3.2 Locally improved seeds, adapted for climatic conditions of Pearl Lagoon Basin are available to purchase when needed.
	3.3 By the end of 2022 8 (25% female) community members are trained on data collection methods and are patrolling and surveying cays daily at PCWR during nesting season (March to November), benefitting an estimated 40 people (5 members per community member family)	3.3 Signed agreements, monthly signed payroll stubs.	3.3 Community members are willing to participate in the project and be hired.
	3.4 By 2023, Kabu Tours is operational and employing 20 (20% female) community members, benefitting an estimated 100 people (5 members per community member family)	3.4.1 Signed agreements, Kabu tours reports with pictures evidencing activities execution.	3.4 The sociopolitical and pandemic situation allows visitation to Pearl Cays to continue throughout the year.
	3.5 By 2024, Kabu Tours is generating a net annual income of 15,000	3.5 Kabu Tours annual bank statements.	3.5 The sociopolitical and pandemic situation allows visitation to Pearl Cays to continue throughout the year.

Activities (each activity is numbered according to the output that it will contribute towards, for examples 1.1, 1.2 and 1.3 are contributing to Output 1)

Output 1:

1.1 Patrolling and quantifying nesting activity in the PCWR

1.2 Carry out Nest excavations, data collection and relocation of nests if necessary to other secured areas in the same beach.

1.3 Carry out tagging of newfound turtles and record returning females.

1.4 Carry out analysis of field collected data

Output 2:

2.1 Carry out field trips, talks and workshops on primary schools and field trips and training workshops with university students

2.2 Carry out field trips and practical workshops with indigenous leaders, government officers and authorities, to increase technical capacity and awareness on marine turtle protection

Output 3:

3.1 Hiring of an agricultural extensionist to carry out sustainable livelihood activities with 4 communities.

3.2 Field trip to socialize and discuss sustainable livelihood activities with local communities and reach an agreement on the parameters to benefit families: female head of households, fishers working in the PCWR, others to be determined in conjunction with local leaders.

3.3 Field trip to negotiate and sign conservation agreements within 4 target communities

3.4 Acquisition of certified seeds of staple food and submission of them according to agreed quantities per family.

3.5 Technical advice and follow up visits to producers to supervise crop progress and ensure success

3.6 Acquisition of hens and distribution, according to workplan, and conduct practical training workshops on hen's husbandry techniques, follow up.

3.7 Design and carrying out a socioeconomic survey among local communities (baseline) and carry out a second survey at the end of the project

3.8 Data analysis of socioeconomic survey

3.9 Improve livelihoods for 8 people hired as community patrollers, benefiting indirectly 40 people based on an average household size of 5 people.

3.10 Reactivation of Kabu Tours community Enterprise, as a co-finance activity, leading to employment opportunities and opportunities to raise awareness on marine turtle conservation through tourism

Annex 1

Annex 3 Standard Indicators

Table 1 Project Standard Indicators

DI Indicator number	Name of indicator	Units	Disaggregation	Year 1 Total	Year 2 Total	Year 3 Total	Total achieved	Total planned
0.1	By 2024, hawksbill turtle nesting populations in the Pearl Cays show stability and an increase of at least 10% of new nesting females and 10% in returning females in comparison to the 2022 baseline	Nest		782	894	931	3,373	Increase 10% per year
0.2	By 2024, 90% of targeted students and key stakeholders demonstrate strong understanding (score 85% or higher on post-workshop survey) of hawksbill turtle protection and conservation.	People	Women/men	100%	100%	100%	100%	90%
0.3	By 2024, 80% of targeted families are reporting an increase in food availability from engaging in sustainable livelihoods activities compared to the 2022 baseline.	Families	Families	100%	100%	100%	100%	80%
1.1	By 2024, 9 nesting beaches are protected (verified by number of nests recorded compared to number of nests poached and destroyed by natural means) within the PCWR	Number	Nesting beach	9	9	10	10	10
1.2	By Y3, at least 92% of hawksbill turtle nests compared to Y1 data are protected by community patrollers in the PCWR	% Number of turtle nest	Turtles	97.9%	98.2%	97.85%	97.98%	92%
1.3	By Y3 of the project average emerging success per nest (based on estimated successfully hatched eggs per nest, per year) is maintained compared to Y1 data.	Number of hatchlings per year	Turtle	38,004	62,133	69,051	169,188	Had and Increase
2.1	By 2024 1,500 (50% female) pupils in primary and secondary schools in 8 communities and 200 (50% female) university students are reached with conservation outreach and environmental education activities	People	Female male	65 (52%) 60 (48%)	908 (47.8%) 991 (52.1%)	743 (45.6%) 886 (54.3%)	1,716 1,937	850 850

DI Indicator number	Name of indicator	Units	Disaggregation	Year 1 Total	Year 2 Total	Year 3 Total	Total achieved	Total planned
2.2	By 2024 90 (40 % female) Indigenous leaders, 30 (50% female) Government Officers and 60 enforcement officers (military) have increased technical capacity and awareness on marine turtle protection	People	Female Male		17 (39.535) 26 (60.46%)		17 26	30 60
3.1	By 2024, conservation agreements are signed in 4 target communities around the PCWR benefiting 260 families	4 Letter of agreement			5	1	6	4
3.2	By end of project, 260 families (60% female head of household) are benefitting from agricultural or domestic animal husbandry project inputs	People	Female Male	132 (40.12%) 197 (59.87)	91 (100%)		223 197	156 104
3.3	By the end of 2022 8 (25% female) community members are trained on data collection methods and are patrolling and surveying cays daily at PCWR during nesting season (March to November), benefitting an estimated 40 people (5 members per community member family)	People	Female Male	2 (25%) 6 (75%)	2 (25%) 6 (75%)	2 (25%) 6 (75%)	2 (25%) 6 (75%)	2 (25%) 6 (75%)
3.4	By 2023, Kabu Tours is operational and employing 20 (20% female) community members, benefitting an estimated 100 people (5 members per community member family)	People	Tour trip					
3.5	By 2024, Kabu Tours is generating a net annual income of 15,000	Annual income	Money			C\$8,490 (€219.30)	56.6%	C\$15,000.00 (€389.41)

Checklist for submission

	Check
Different reporting templates have different questions, and it is important you use the correct one. Have you checked you have used the correct template (checking fund, type of report (i.e. Annual or Final), and year) and deleted the blue guidance text before submission?	x
Is the report less than 10MB? If so, please email to BCF-Reports@niras.com putting the project number in the Subject line.	x
Is your report more than 10MB? If so, please discuss with BCF-Reports@niras.com about the best way to deliver the report, putting the project number in the Subject line. All supporting material should be submitted in a way that can be accessed and downloaded as one complete package.	
If you are submitting photos for publicity purposes, do these meet the outlined requirements (see section 14)?	
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.	
Have you involved your partners in preparation of the report and named the main contributors	
Have you completed the Project Expenditure table fully?	
Do not include claim forms or other communications with this report.	