



**Darwin Initiative, Darwin Plus and  
Illegal Wildlife Trade Challenge Fund  
Covid-19 Rapid Response Round - Final Report**

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**PLEASE DO NOT PUBLISH ANNEXES 1, 2 AND 5**

**1. Project Summary**

The Covid-19 pandemic caused a major halt to formal and informal economic activities in Guatemala, hitting particularly hard in already impoverished rural communities (<https://soy.usac.edu.gt/?p=11962>), more so those depending on tourism, such as Petén, where since 2019 our team has been developing the Green Health project. An initial assessment conducted in August 2020 by UVG showed that of the 83 families participating with the ACGERS Council, two thirds could not procure more than one formal meal a day. With the suspension of classes in the public sector, many children also lost the free meal the Ministry of Education provided, pushing further food and nutritional insecurity (ForbesCA, 2020). Activities listed by ACGERS families as coping mechanisms affecting biodiversity included increased hunting and plant collection activities in the surrounding forests, adaptation of family gardens to include more local species of food plants, and increased visits to local traditional Ajilonel (medicine men) to treat respiratory illness (UVG, internal GH report 2020). Local families fear traveling to official health posts for the increased chance of contracting coronavirus, making traditional medicine (and involved plants) increase in demand. Overall, the pandemic pushed families' livelihood strategies to increase the burden on the surrounding forest, pushing poaching and hunting activities with negative impacts on biodiversity forward, while at the same time creating incentives to augment the number of local species brought closer to home to increase production in local gardens and for use as medicines. This emergency response aimed to create local jobs for project participants, generating income covering a year's supply of food staples. Local jobs included: gathering seeds of local species through forest transect walks; planting and nurturing of seeds in a local ethnobotany garden; research on the adaptations families made to plant food gardens, and documenting traditional medicine used for respiratory syndromes.

The project is located in Guatemala, mainly in the northern lowlands of the subtropical forest. The local indigenous partner is the ACGERS Council (Association of Councils of Spiritual Guides Releb'aal Saq'e') based in the Poptún Municipality. However, the network of Q'eqchi' indigenous healers working in this project extends to the regions of Petén, Izabal, Alta Verapaz and Baja Verapaz (see **Annex 4** for a map of the study area where activities took place).

**2. Project Achievements**

The project aimed to help recuperate food security and improve livelihoods of indigenous partners affected by Covid-19, through creating local jobs in conservation and research on traditional use of biodiversity. Particularly, it proposed to:

**Objective 1.** Generate enough additional income for local Q'eqchi' families working in the Green Health project, to guarantee food security for one year.

**Objective 2.** Conduct participatory research with Q'eqchi' specialists to understand local use of biodiversity in food production strategies through analysing family food gardens.

**Objective 3.** Generate evidence on the role of traditional medicine to face the Covid-19 pandemic in the study region.

**Objective 4.** Kick-start a nursery of local plant species capable of producing seedlings for aiding ongoing reforestation campaigns.

The main activities undertaken during this Green Health Covid-19 Rapid Response project consisted of:

**A. Preparatory activities**

1. Organizing 120 families distributed in 35 communities over a vast territory, selecting at least one household head or member per family, to conduct different jobs (organized in four clusters) according to their abilities, age and gender. 1,554 shifts were transparently assigned to ensure payments were allocated fairly, so that all families could secure one year of food staples (corn, beans) from the new income.
2. Developing ethnographic data collection tools and training selected members of the ACGERS Council in the methodologies employed in each of the four job clusters, to act as local supervisors.

**B. Job Cluster 1: Forest transect walks and biodiversity use (Annex 5)**

3. Led by the ethnobotany expert and Q'eqchi' 'forest keepers', transect walks into the forest were made to document plants used locally. Georeferenced maps were made showing collection points and individual species entries were filled.
4. In each transect walk, seeds were collected for available species previously targeted by the Q'eqchi' for having cultural, commercial or biodiversity value. The seeds were taken to a tree nursery developed in the ACGERS Council's headquarters.

**C. Job Cluster 2: Tree nursery implementation (Annex 6)**

5. Led by UVG's agricultural engineer, older women not able to go on transect walks worked with the collected seeds and helped preparing seedlings in the nursery, as well as planting and tending the permanent botanical gardens in the Council's headquarters.
6. An irrigation system was built for the nursery and materials bought to ensure continuation of the nursery in the long term. Specialised training was given to men and women of the Council to teach them how to use new tools such as seedling trays, maintenance of irrigation system, curation of seeds per species etc.

**D. Job Cluster 3: Documenting food production strategies in family gardens (Annex 2)**

7. Men and women from 65 families participated in documenting their strategies for food production, led and supervised by the team's ethnographer. Using a specific instrument to record space-utilization in a family plot, families drew maps and documented their latest strategies for planting specific plant species, the reasons for choosing each one, their uses in diet, medicine, and income generation strategies.

**E. Job Cluster 4: Documenting traditional medicine practices (Annex 3)**

8. 20 specialised medicine men and women (Ajilonel, midwives) documented their medical practices during two months, including therapeutic processes to treat respiratory illness. Led by the medical anthropologist at UVG, we employed cultural epidemiology booklets to train the local medicine men and women into documenting all services given in a trimester to patients seeking their services. This data included specific plants employed per treatment.
9. Some medicinal plants that could be collected during transect walks were curated and are being identified at the UVG herbarium.

2.1 Changes to the project

All planned activities were executed successfully in spite of having very little time to organize and implement the project. This was possible due to the transdisciplinary platform already in place from the Green Health Darwin Initiative project. The success of this intervention relied on training local Q'eqchi' members of the Advisory Board from the ACGERS Council to act as indigenous researchers. Our team trained them in the use of specific research instruments as well as in the supervision of data gathering strategies with local families, so they were able to help train individuals and families and supervise their work for each cluster. Main changes from the original plan included:

**a)** Fifteen more families participated in the documentation of food gardens and food production strategies, given this was a task that more women could do regardless of age, which allowed us to increase the participation of older women in the project.

**b)** More men had to be included in the tree nursery implementation, since a lot of the work assigned in shifts was considered heavy duty and most women could not perform some tasks. Although women will continue to tend the garden, the Council decided to hire a male member with knowledge on organic production to help oversee interventions to keep seedlings healthy (control pests, fix irrigation system, etc).

**c)** Traditional healers could complete two months of work documenting the healthcare assistance they provided to local patients in the epidemiological booklets, instead of the three months originally planned. This was so because funding arrived very late in Guatemala and most families had to engage for the first month in other work to support their families.

d) Overall, a total of 120 individuals and families benefited from the project, 40 more than the original 80 planned, given there was a chance to create more shifts in three of the job clusters (this was also enabled by a more favourable exchange rate from pounds to GTQ from the original expected projection).

## 2.2 Underlying conditions and challenges to the project

The main challenge to the project was the delay in funds received in Guatemala, as well as the subsequent delay caused by the UVG's national partner institution, who could not deliver on time payments to the healers due to restrictions on their internal regulations for legal expenditures.

Medical and biological investigation with local healers was only one aspect of this project. The distribution of material aid to long-term indigenous partners at a time of multiple, overlapping natural disasters was an essential element of support and also continued to further develop our trustful relationship. However, while it had seemed that this would be the easier and more immediately gratifying side of the project, it turned out to be, by far, the more strenuous given the divisive role that substantial sums of foreign largesse can play in rural communities suffering under conditions of extreme poverty. Several instances of bureaucratic miscommunication and last-minutes changes from UVG's financial unit, led to this aid money being held in suspension, which in turn held up the contracted schedule of payments to Maya elders for their research work, already conducted on behalf of this project. This, in turn, produced a highly unconstructive, if understandable, backlash from the healers and their communities. Researchers were placed in difficult positions upon multiple occasions, and in one instance physically assaulted by an angry healer (no serious injuries were sustained). In the future it is hoped that a greater degree of coordination will be aspired to and attained between international, national, and local partners, which is difficult in such short-term projects. When promised payments, not just aid disbursements but wages for work already carried out, are not delivered in a timely fashion it greatly undermines the credibility of local partners, in this case the Asociación de Consejos Guías Espirituales "Releb'aal Saq'e" (ACGERS). Without the assistance of the members of the executive council of this organization this work would simply not be possible. The ACGERS Council created 'vouchers' to be able to pick up the data sets produced by the participating families in time to elaborate the financial report (since individuals needed to sign for receiving all payments before March 31st 2021). These vouchers were accepted by some families without any problems, but all expected to be paid in cash soon after. The preliminary agreements with UVG to deposit cash to the Council could not be completed because they did not have the most recent legal paperwork ready in order to allow their newly elected president to sign a contract with UVG and receive the money directly. Therefore, UVG had to issue direct checks to each participating person in the tasks, which further delayed payments. In a rural setting where banks are far away, many families encountered problems to cash the checks and needed to be helped by the Council, creating much more work for visiting the 35 communities to deliver the checks, explain how to cash them and accompany elderly women and others in need to cash them. Finally, such a packed project caused severe strain on the UVG researchers developing the project.

## 2.3 Gender equality

This project aimed to provide women with equal access to income generation. In order to do so, specific job clusters were designed to allow for tasks that women of all ages could do. At least 15% of all households in the area are composed of single women, which meant our greatest effort was in ensuring these women had access to new income through the project activities. As the table below shows, the project was successful in guaranteeing that 42% of all participants receiving payment were women (see Annex 1). This is extremely positive since prior projects in the same area showed only 8% of women participated in income generation activities (Acofop, 2020). Traditionally jobs that require women venturing alone are not culturally permitted, which made it impossible to include women in forest transect walks or as community research supervisors.

Job Cluster	Women	Men	Total	% of women
Health research	2	18	20	10%
Food gardens	41	24	65	63%
Forest transects	0	10	10	0%
Plant nursery	7	16	23	30%
Indigenous researchers	0	2	2	0%
<b>TOTAL</b>	<b>50</b>	<b>70</b>	<b>120</b>	<b>42%</b>

## Value for money

This was an emergency response to offer relief to populations severely affected by Covid-19, which is why most funds were directly allocated to guarantee food security for these families, also helping to counteract predatory practices in the surrounding forest. After evaluating different possibilities for measuring the best value for money, we concluded that the four job clusters implemented in this rapid response, achieved the largest impact (measured as positive impact on livelihoods and positive impact on conservation efforts) with the least amount of resources. We were able to produce four milestones with large amounts of evidence (datasets) and concrete impacting actions, in little time, thanks to our focus on participatory approaches that provided added value amongst local Maya partners in the Peten region.

**Direct support to Maya families** We expected to directly benefit 80-90 families participating in the conservation and research activities of the Green Health project, but managed instead to work with 120 families, benefitting a total of about 1,200 people, since each family has 10-11 members on average (USP, 2018). All families received enough income to secure basic food staples for a year (mainly corn, beans, oil), which will help palliate an extended food crisis made worse by the loss of corn crops during ETA and IOTA storms in 2020.

**Scientific gains** The value of documenting the work of Ajilonel, Maya healers, lies in creating a body of scientifically substantiated information about a unique indigenous medical practice with deep historical roots. At the universal level this research is meant to benefit all of humanity by establishing another point of comparison and contrast when critically evaluating medical and therapeutic practices in a variety of contexts, and it brings us to a better understanding of the possibilities inherent in human behaviour *in orbem universum* with relation to the practices of health and illness. The same applies to the Q'eqchi' knowledge of using local biodiversity for food production strategies and keeping healthy forests. At the local level of the embedded cultural practice this research also provides strong benefits to its practitioners. Following the Access and Benefits Sharing (ABS) model embraced by the original Green Health project and its associates, the data collected will enter a large database of information on forest biodiversity, medicinal plants, and the use of plants in traditional Maya therapeutic practices in the area of 8 municipalities mentioned above.

This research contributed to our scientific understanding of the region's biocultural diversity and mechanisms for its protection. This project is embedded within a longer-term investigation of tropical old-growth forest use by Maya elders. It seeks to document patterns of use, which can illuminate hitherto understudied phytopharmacological activities. The cultural epidemiology patient evaluation booklets (example in Annex 3) produced by the project give insight into many interesting properties which these little-studied plants may hold. 200 distinct medicinal plants were identified by elders in their patient treatment histories. Each of these 313 distinct treatment histories provide multiple descriptions of how these Maya healers chose certain plants to treat specific health conditions in their patients, and usually within a treatment matrix suggesting further features, connections, and applications. This feeds into the Green Health project, and will be analysed in the forthcoming months and will be assessed in the context of previous work by the project's multidisciplinary team. Comparison with past and future research may yield additional insights and scientific discoveries, which could benefit host communities under the Convention on Biological Diversity and similar international protocols now in place.

Maya elders in this region are very interested in having this data collected, systematised, and made available to them, for their own use and to conserve and pass this knowledge to future generations. In turn, through this project, those elders and therapists continued being trained to carry out their own research, to organize and share knowledge outside of their immediate circles, and to mobilise their organising networks around this particular set of issues, which enhances its importance in the local sphere and makes it more likely to be acted upon in the future. This capacity-building extends across all four project-clusters and across a spectrum of skills and capabilities. Likewise, involvement in this sector has the added effect of bolstering the self-esteem and social standing of members of an historically oppressed and marginalised population.

Of equal importance is how this research helps to substantiate the value attached to forested areas in the region where this project was carried out. The elder Maya healers with whom this project worked are often described as "guardians of the forest". Yet, even to them, the forest is a place of danger, of wild and chaotic forces that threaten human life just as much as providing pathways to healing and treatment. Maya healers and members of the Council do have a vested interest in seeing these old green spaces survive. On a purely operational level, they must be continually able to gather plant medicines from these spaces to keep their home clinic practices open and thriving. Yet their mythos, their brand if you will, derives its power from these spaces. For one to exist so must the other. Maya healers, Ajilonel, and their clients are probably the only significant constituency within these communities who do have a strong vested interest in conserving these dwindling forest spaces. Hence the preliminary work done with the tree nursery and careful documentation of forest species is opening a new paradigm that is receiving attention and increasing interest nationally.

#### Partnership effectiveness

As can be seen in the positive impact on families' income and the immense amount of knowledge gained during only a three-month intervention, the overall success of this project was possible due to an already established partnership among the ACGERS Council, UVG and UCL. Mutual trust enabled all sides to implement a complex project in short

time. Guatemalan researchers had good knowledge on the challenges of the area due to Covid-19 and could quickly and effectively co-organize local families to structure a comprehensive intervention, giving the ACGERS Council a key role in the detailed supervision of beneficiaries. The transdisciplinary approach had already built avenues for quickly adapting to challenges and opportunities, which made it possible to present this project and conclude it reaching all milestones.

#### Safeguarding and ethical considerations

This project was fully covered by the existing ethical and other ethical permits already in place for the project Green Health, given UVG's IRB supervises project implementation to comply with practices of protection of human subjects and vulnerable populations. The Maya protocol was followed in full compliance with the ACGERS Council of Elders rules and expectations, including the celebration of two sacred ceremonies (one in which the British Ambassador participated).

**Measurement of achievements (each as per Objectives outlined in section 2 of this report).** All achievements are reported using the SMART indicators outlined in the original proposal.

**Obj1: A minimum of 80 Q'eqchi' household heads participate in income generating strategies. A minimum of 700 people directly benefited by increasing access to urgently needed food resources.**

A total of 120 households participated in income generation activities of this project, encompassing an average of 1,200 individuals benefited from increased access to food staples bought with those resources. Evidence of benefited family household heads is presented in **Annex 1** containing all lists of organized shifts and corresponding payments. As these lists have names and personal ID numbers, they cannot be published online.

**Obj2: A minimum of 50 family plots are documented for strategies on improving biodiversity of food sources (Cluster 3).**

A total of 65 household heads, 23 men and 42 women, knowledgeable in local agricultural strategies researched and documented their food gardens using the methodology described in section 2. **Annex 2** presents the evidence of this work cluster. Each family had an average of 16 plants, being 3 the minimum and 43 the maximum of plant species in food gardens. The family with less planting area has 15m<sup>2</sup> and the one with the most, 35 "manzanas" of land (equivalent to 10,000m<sup>2</sup> each) (to know the quantity of food gardens per different ranges of area see Annex 2-Food Gardens Inventory T5). There were a total of 159 different plants reported and 1 species of animal (chicken). This includes edible (n=94; 59.1%), medicinal (n= 17; 10.6%), timber (n= 9, 5.6%), medicinal or edible (n=8; 5%), for shade (n=6; 3.75%), the rest had uses like crafts and other combinations of the uses described above (see Annex 2-Food Gardens Inventory T7). The names of beneficiaries documenting the garden plots in Annex2 cannot be published online.

**Obj 3: A minimum of 20 healers document two months of patient attention in cultural epidemiology booklets. All plant species described in the respiratory syndromes are identified at least in an ethnographic archive (Cluster 4).**

Twenty specialised medicine specialists, 18 men and 2 women documented their medical practices during two months, providing data of 313 cases of tending to patients. (see **Annex 3**).

**Obj 4: At least 4 transect walks are conducted and a minimum of 2000 seeds of 20 local species of trees and useful plants are gathered. A minimum of 1000 seedlings are planted for production in a local plant nursery created for this purpose (Cluster 1 and Cluster 2).**

**Cluster 1** activities (transect walks in forest): A total of 13 transect walks with 10 Ajilonel in 7 different communities were conducted to document plant uses relevant to the Q'eqchi' elders. Each plant was georeferenced to gather seeds upon availability throughout the next year. **Annex 4** presents two maps, that of the communities where transects walk were conducted and one with the georeferenced transects themselves. These resulted in a total of 201 plants registered. A total of 52 species were identified until now, with 106 specimens identified to the closest taxon belonging to 55 different genera, and 37 families. Out of the total uses registered for the 201 plants, the most mentioned with 27% occurrence are medicinal plants, then 26.9% for wood, used for house construction, boards, planks, and ceiling construction; followed by 12.1% of plants with an edible part to be used as food, primarily fruits. The uses listed as "others" (4.4%) includes used for resin, fodder, pest protection, gum material, and blowguns ("cerbatanas"); 4.4% of plants used for handcrafts includes baskets, string to decorate, and dyes. Other uses documented include animal shelter (9.6%), firewood (7.4%), ceremonial (3.6%), ornamental (2.2%), plants used to generate shade (1.6%), and aromatic uses (0.6%). **Annex 5** [REDACTED]

[REDACTED]. The full database is available upon request. Given this project is part of a larger ABS component in the Darwin Initiative Fund, we request annex 5 is not published.

**Cluster 2** activities (reproduction of seeds in plant nursery): From the transect walks, a total of 2,621+ seeds from 22 species and 180 seedlings from 11 species were collected for further assisted reproduction in the Council's plant nursery (see **Annex 6** for inventory of seeds' collection and a report of main activities for the plant nursery

implementation). Seed collection strategies ranged from picking up seeds from the ground, to shaking trees and bushes to collect the seeds. Of the work carried out for the reproduction of plants, a 0.2x1x8m seedbed was built with fertile soil. Participating women were dedicated to fill, arrange and organise bags (“bolsas”), and to prepare the area for the seeds to be reproduced, employing a total of 43 wages (distributed for 7 women). Participating men were dedicated to fencing the land, veneering, building the warehouse and shade house, mixing and casting the substrate, staking and ordering the bags, etc, these being 101 wages (distributed to 16 men). A total 1,052 planting bags were established by transplanting seedlings collected during transects, or by direct sowing of seeds and cuttings. The number of seeds available corresponds to the flowering and fruiting season of the plants when the transects occurred, according to the seasonal changes in the Guatemalan lowlands. According to the knowledge of the Ajilonel, most plants flower between February and March and fruit from March onwards or in July and August. However, the flowering and fruiting of a large number of plants is unknown (around 86 records without knowledge of these characteristics by the Ajilonel).

Overall, this Green Health-rapid response project has **contributed to the aims of the Darwin Initiative Fund** by jumpstarting the knowledge on the use of biodiversity for the Q’eqchi’ communities in the study region, beyond that of medicinal plants. It has provided a rich database that can serve as a basis to understand strategies for food production of local populations with a link to its immediate environment (biodiversity use) and how the forest is directly used and impacted. The initial database of forest species considered to be valuable (all uses) and the corresponding mapping of specimens for ongoing seed collection have provided useful knowledge beneficial to upcoming reforestation efforts that go beyond our projects’ aims and the typical fine-wood species strategies employed by forestry NGOs in the area. The plant nursery is a novel proof-of-concept that can be scaled up to show how local communities can generate income while engaging in activities that promote the recuperation of biodiverse forests. Overall, this project has provided strong evidence to incentivise the protection of local forests by showing emic perceived value as a pharmacy and source of many sustainable uses for locals, as well as the beginning of assisted reproduction efforts of a wide variety of plant species to reduce negative impacts of unsustainable use.

### 3. Lessons learnt

One of the most satisfying aspects of working on this project has been conducting research side-by-side with members of the ACGERS council. The development of these potentially life-long and life-changing relationships significantly alters the nature of the research conducted. The transdisciplinary process followed has made it possible for local Q’eqchi’ partners to fit the project into their own worldview and practices in the fashion that seems most advantageous to themselves, as individuals and as a group. There is no doubt that the work of this project and the resources it distributed increased consciousness about how foreigners value biocultural diversity including conservation, old growth forests, and traditional indigenous cultural practices such as the healing practices of the Ajilonel. ACGERS Council and other stakeholders have reflected upon these developments and cooperations, resulting in changes in perspective and understanding. How this plays out in the long-run remains to be seen.

The time frame of this Covid-19 Rapid Response project did not leave much room for ethnographic research. This would have meant spending a lot more time with local partners in informal settings to hear how they talk about and see how they act towards research themes when not directly engaged on the topic by a member of the research team and one of its outsider professionals. This lack of longitudinal qualitative research is partly compensated for in this case by previous work done by the UVG Medical Anthropology Unit, which has been working with the ACGERS council for several years. Likewise, all of the research was carried out with members of the core Council coordinating committee present. Much of the research was conducted exclusively by these Council members, while in the other circumstances they were always present and assisting in the research. Without their presence the research would not have been possible, and so it is an important lesson to share. Time invested in building trusted partnerships and in building local capacity was key to the project’s successful implementation. Nevertheless, and especially with the guarded, jealous, and suspicion-minded elder Ajilonel this causes a degree of mistrust regarding the reliability of the information that was collected in some cases, to a certain extent. Many expressed concerns over “the ends” of such a fast project, and even core members of the Council at times expressed these same concerns. Where would the information about Q’eqchi’ spiritual power and plant medicine go once it had been gathered up and shipped off to the national university? Once it got to wherever it was destined, how would it be used? This shows that an ongoing partnership with local universities is key to return results to local collaborators, engage in communication efforts and, down the road, demonstrate concrete benefits for local families (or at least the lack of misuse of this information).

There was not enough time to corroborate any of the information collected in this trimester with the kind of long-term, inter-personal research that is at the heart of the anthropological mission. Thus, if some information was in fact false, traditional healers could only construct their fictions out of the truths that their minds had already ingested. A fake instance of a real illness still gives insight into the types of illnesses present in these communities. Likewise, suggested courses of treatment and the plants typically used may all appear out of order, but, in the end, they do provide a useful master list derived from the world view of these practitioners. We will monitor and assess this during the course of the ongoing Green Health project.

Regarding financial limitations covered in section 2.3, a lesson learned is that emergency short-lived projects such as this require more agile financial transfer mechanisms when involving many partners across continents, particularly to avoid losing credibility in the local contexts. It is evident that Guatemalan (and probably Latin American) institutions wanting to demonstrate transparent financial practices, which require lengthy bureaucratic processes, cannot easily adapt to such short timeframes. As such, this rapid response project has also triggered some learning processes for the academic institutions.

#### References

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