



CPALI Annual Report  
2006



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*Cover: Some of CPALI's field team. Left to right: Felipe Trabanino (CPALI), local field guide, Gaga (Atongil Conservation) and Letecia Alvarez (Wildlife Conservation Society).*

## CPALI Mission

**Conservation through Poverty Alleviation, International** (<http://www.CPALI.org>) is a US- based non-profit organization that works to identify, develop and implement new means of income generation for poor farmers living in areas of high biodiversity or conservation value. We were founded in 2002, incorporated in Massachusetts in 2003 and approved as a 501(c)(3) by the US Internal Revenue Service in 2004. CPALI's mission is to contribute to natural resource conservation by developing integrated, small enterprise systems that link the livelihoods of farm families and communities to the maintenance of natural ecosystems. We are currently working in Madagascar and assisting in the revitalization of the wild silk industry. CPALI is committed to this work because we believe long-term conservation will only be achieved if people living in and near endangered sites have a vested interest in protecting them.

## Letter from the President

Dear Friends and Colleagues,

Effective, place-based, conservation strategies are a key environmental need in the tropics and poverty alleviation must be part of the solution. However, traditional livelihood goals and conservation goals have not always been compatible. CPALI's scientists, field workers and partners are working to design new ways of doing conservation to address this problem.

For past three years, our approach has been to support conservation organizations in Madagascar who are protecting unique biological environments. We target work on border forests that surround these sites. Specifically, we are identifying new species of silk-producing moths, and new ways of rearing them sustainably in border forest sites. Our goal is to give local villagers an economic reason to maintain forests instead of cutting them down.

In 2006 we extended our existing partnerships and started new collaborations to assist in conservation and poverty alleviation in the Makira/Masoala Protected Area, the largest remaining area of rainforest on the island. We are partnering with the Wildlife Conservation Society and Antongil Conservation to survey and map the nesting sites of a colonial silk moth that has potential commercial value. We are working with Ny Tanintsika and local weavers to process the silk and produce yarn.

To ensure that markets will be available for the products we will produce, CPALI has helped to create the Rainforest Silk Cooperative (RSC). The RSC is a consortium of silk producers who are pooling their resources to bring wild silk production to commercial scales. Our model represents a new approach to the marketing wild silk and to access the global economy. We are excited



about the potential of our approach to provide sustainable support for conservation through poverty alleviation. With our first four partners, Ny Tanintsika (Madagascar), Kalahari Silk Project (Namibia), Appropriate Technologies, India, and the Royal Silk Project (Indonesia), the RSC spans four continents. In anticipation of a formal agreement, we have built a website from which products from each of the partners can be ordered, and we have already made first arrangements with commercial clients.

In addition to the National Geographic Foundation, our work this year has been supported by financial or in-kind donations from the Wildlife Conservation Society, Timberland and the Environmental Club of Westlake High School of Austin, Texas. We are very grateful to them.

I hope that you enjoy reading about CPALI's successes and will consider contributing to our mission.

Sincerely,



Catherine L. Craig, President  
*Conservation through Poverty Alleviation, International*



## Latest news from the field

We are currently in the midst of our second field season in Madagascar. CPALI now has its first Malagasy “headquarters” in the town of Maroantsetra in northwestern Madagascar. Our fieldwork is focused on the border forests to the northeast of the town that edge the Makira Protected Area, as well as to the east in forests bordering the Masoala National Park.

The Makira rainforests cover over a quarter of a million hectares and some are little explored. By request of the government of Madagascar, the Wildlife Conservation Society (WCS) outlined 8 areas of “transfert de gestion,” or sites where a participating community-based management authority (COBA) and the Madagascar Department of Water and Forest work together to manage the land. Within these areas, economic rights to sustainable activities that fall within prescribed conservation guidelines have been transferred to local villages. We are extremely lucky to be initiating our program at a time when communities are actively working to identify economic alternatives to *tavy*, or slash and burn agriculture, for the community forests.

CPALI is currently working in Amboivoahangy, Andaparaty, Marovovonana, and Ambalamahogo (Fig.1). We organized a collaborative team of field biologists who represent three different conservation organizations: WCS, Antongil Conservation, and CPALI. Antongil Conservation is a locally based NGO that has established educational programs in the Maroantsetra area and is headed by Augustin Tsarovy. Tsarovy, previously an ANGAP guide, identified and led us to silk nests produced by the silk moth *Hypsoides singularis* Kiriakoff (species identification tentative and based on photographs and collecting sites found among the research collections in the Muséum National d’Histoire Naturelle, Paris). Although *Hypsoides* species are not currently used in Madagascar to produce silk textiles, a similar type of moth and silk is used for textiles in West Africa. A sample of *Hypsoides* silk has been delivered to a weaver in Tana who is assessing its quality.

Based on the economic potential of the moth, CPALI mounted four expeditions to look for cocoons and the habitats in which they were found. Tsarovy led the first expedition and CPALI field biologist, Felipe Trabanino, led the remaining three. Compared to other silk producers, the cocoons are relatively easy to find. *Hypsoides* larvae, unlike most silkworms, forage in aggregations. Prior to pupation, the larval group spins a large communal cocoon or sac (Fig. 2). Individual larvae then spin individual inner silk cells of very fine, angora-like silk. The sacs vary in size and can contain 2-70 individuals and are always found in association with the larval food plant, but not on it.

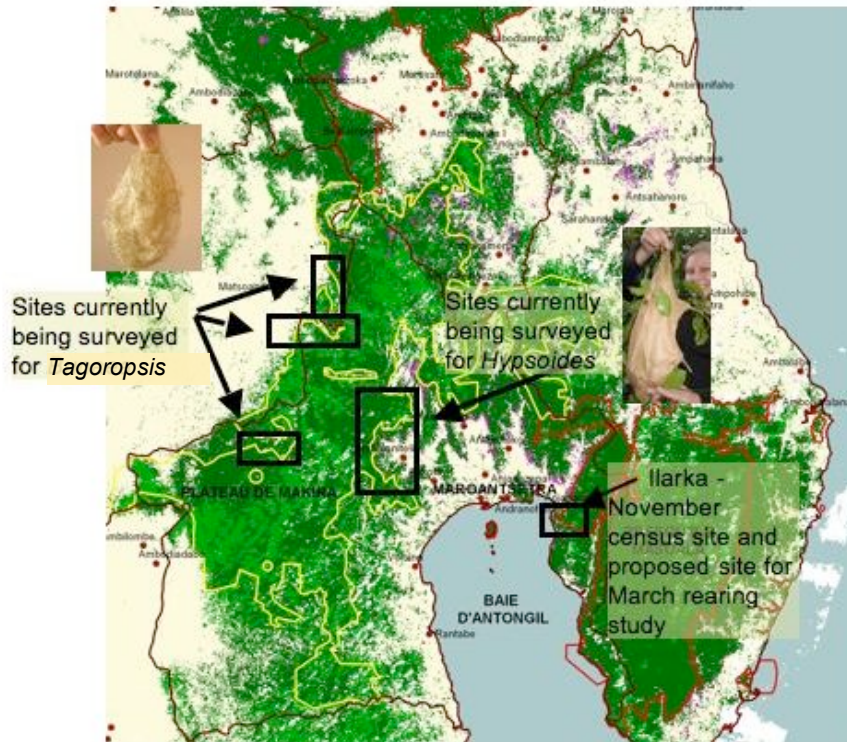


Figure 1. We are working to assess the economic potential of wild silk production in 7 sites where the Wildlife Conservation Society and the Malagasy government have transferred forest management rights to local populations: 3 areas at the western edge of the Makira protected area; 4 areas on the eastern edge of the Makira protected area. We are also surveying a site at the edge of the Masoala National Park where l'Association Nationale pour la Gestion des Aires Protégées (ANGAP, organization of Malagasy National Parks) suggested that income generating intervention was needed to protect the park edge.

The groups found almost 500 sacs. We are now using the GPS coordinates they collected to plot the distributions of cocoons in each of the 4 COBAs. The terrain and vegetation in each COBA are different, as is the patchwork of *tavy* and *tanimbary* (irrigated agriculture or rice fields). We hope that we will have enough variation to compare silk production in different ecological landscapes but not so much variation that we will be unable to replicate the experiment. Future experimental work will help us focus our efforts to rear the moths using semi-agricultural approaches. The data also will be used as a baseline against which we can compare the effects of our rearing programs on natural moth distributions and abundance. We hope to mount four more missions in June, 2007, to survey for *Hypsooides* cocoons in the remaining four COBAs on Makira's eastern border.

To add to these exciting field results, the pupae that were collected from one of the cocoons and maintained at CPALI headquarters emerged in late October. This is important for two reasons. First, it indicates that *Hypsooides* produces at least 2 generations per year and second, we are able to maintain the pupae under artificial conditions. We currently have a grant proposal pending to develop a sustainable collection and rearing program for *Hypsooides* in the Makira area.

In addition to surveying four COBAs on the eastern border, CPALI sent a local villager on a reconnaissance mission to the western border of Makira. He returned with 12 large cocoons that are similar to what we think may be high-value cocoons produced by the *Attacus* moth and used for textile production in Indonesia. The moth is in the same family as *Attacus* but a different genus,



*Tagoropsis*. Several empty cocoons were sent to Tana for evaluation.

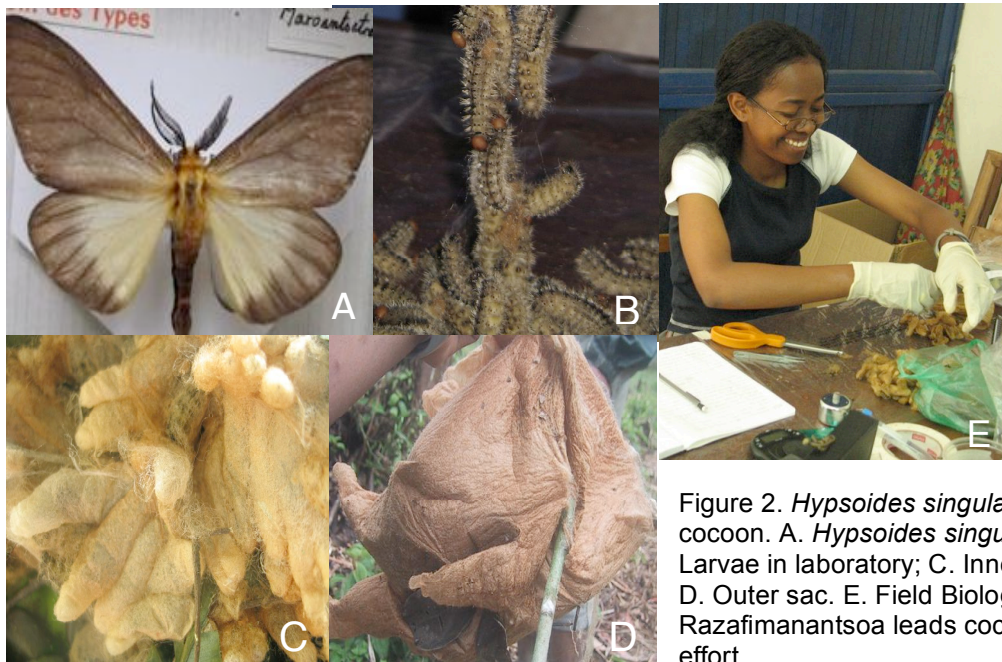


Figure 2. *Hypsoides singularis* and cocoon. A. *Hypsoides singularis* adult; B. Larvae in laboratory; C. Inner sac cells; D. Outer sac. E. Field Biologist Tsiresy Razafimanantsoa leads cocoon-cleaning effort.

In mid-October, WCS established the first COBA at the Eastern border of the Park. CPALI has already sent a new team on a month-long expedition to search for cocoons throughout that site as well as along the forest edge where COBAs will be established in the coming two years.

Finally, a reconnaissance mission was sent to the village of Iharaka at the northwestern edge of the Masoala National Park. Based on the results of that work, a sixth mission is currently underway. Tsiresy Razafimanantsoa (Figure 2) is leading the two-week mission, “light trapping” moths at two different elevations. Early results from the reconnaissance team are promising.

## CONSERVATION PROJECTS

### *GIS mapping identifies sites of potential impact*

During the past year we reported that we were planning to compare collection sites of moths, whose silk we thought was commercially valuable, with GIS data on forest loss, data on the diversity of lemurs, and sites where unique species of vertebrates face imminent extinction. This work is now completed (Fig. 3). We have identified 3 wild moth species in the Makira/Masoala protected area appropriate for silk production and one that is found in areas where lemur diversity is high. Armed with these maps we have begun to contact and visit major conservation organizations in the US and Madagascar to learn whether the sites they are trying to protect have the potential to produce wild silks.

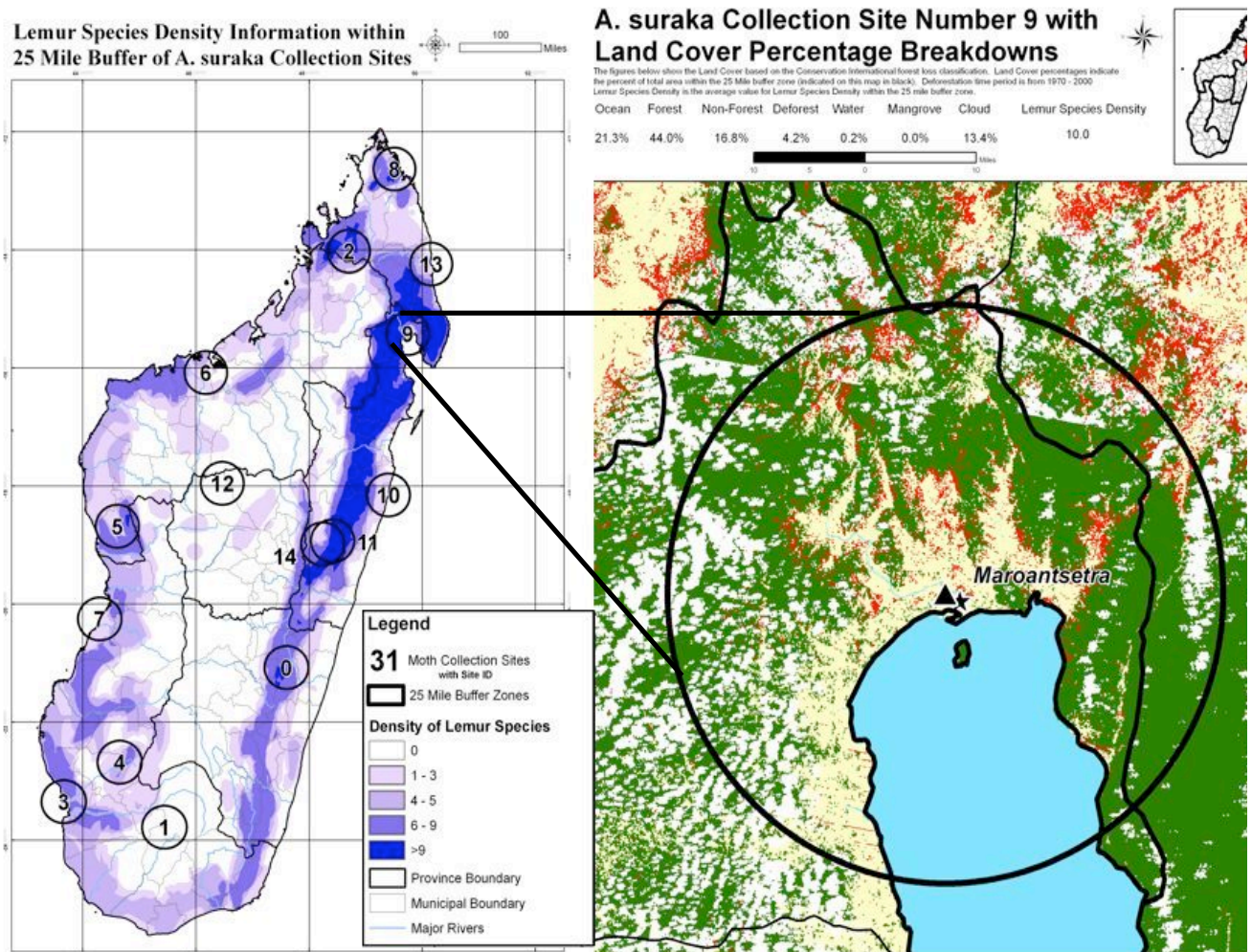


Figure 3. Collection sites for the silk moth *A. suraka* superposed on density of lemur diversity and forest loss. Site 9 encompasses a radius of 25 mi (40 km) that edges the Makira/Masoala Protected Area, the largest remaining tract of forest in Madagascar and the focus of our current conservation focus. (Lemur species data: Mittermeier, *et al.* 2006. Lemurs of Madagascar. Forest loss data: Harper, *et al.* 2006. Environmental Conservation (submitted). Mapping: J. Portelese.

### *CPALI's Techno-economic model is completed*

Over the past two years, CPALI has been working to develop a techno-economic model to assess the profitability of producing different types of wild silk and the local resources that need to be assembled to do so. The model accounts for the inputs, capital expenses, labor, other operating expenses, and outputs of the five major steps in the production of wild silk. The first results of the model link silk production with economic returns to local farmers. By comparing the results of the model with those of a socio-economic study by Bart Minten, we project that the amount of additional income that farmers in the Makira area could earn from silk production may enable them to forego *tavy*. While we recognize that there are cultural and spiritual reasons why farmers engage in *tavy*, at least from a financial perspective, our model suggests that semi-agricultural wild silk production will generate more income than *tavy*. Hence, we hope that wild silk



will become an attractive economic approach to sustainable use of the community forests.

## *Collaborations and partnerships*

### *Wildlife Conservation Society*

The Wildlife Conservation Society, and in particular Helen Crowley and Christopher Holmes, have been providing logistical and institutional support to CPALI's mission in Madagascar. Without their help we would have been unable to establish ourselves as quickly in Maroantsetra, organize working field teams, and identify a new headquarters for CPALI workers. In return, CPALI is working to directly support WCS's missions by exploring new means of income generation in the protected areas it has recently established. We hope for a long and productive association.

### *Antongil Conservation*

Antongil Conservation is a Malagasy conservation organization based in Maroantsetra. Its president, Augustin Tsarovy, introduced us to the border forest areas in the Ambodivoagny COBA. In addition, two of Antongil Conservation's employees have participated in our field missions. We are working to establish a long-term collaboration with Antongil Conservation and hope to be able to make use of their extensive conservation club network when we are ready to introduce wild silk production to local villages.

### *Ny Tanintsika*

CPALI continues to work closely with the Malagasy non-profit Ny Tanintsika. We are pleased to report that Ny Tanintsika hired a team headed by CPALI trainee Tsiresy Razafimanantsoa to survey the diversity of silk producers in the areas where they wish to establish a rearing program. Tsiresy's work with Ny Tanintsika will be completed shortly before she returns to Maroantsetra to begin night sampling in Iharaka.

### *The Rainforest Silk Cooperative*

CPALI is pleased to report the organization of the Rainforest Silk Cooperative ([www.rainforestsilk.org](http://www.rainforestsilk.org)). A major problem for wild silk producers around the world is producing enough wild silk to capture commercial markets. CPALI is addressing this problem by organizing wild silk producers from four like-minded projects in four countries. Ny Tanintsika, the Kalahari Wild Silk Project, the AtIndia Silk Project, and the Royal Silk Project of Indonesia are now working together to advertise their goods and combine their resources. The RSC website currently highlights silk from Madagascar and yarns from India, duvets and pillow cases from Namibia, and a broad variety of goods from Indonesia. In addition, we have placed a classified ad in Shuttle Spindle and Dyepot, a magazine published four times per year by the Handweavers Guild of America. We hope we will be able to establish the RSC as an independent business that is owned by the

participating cooperatives. If you would like to work with us to establish this new and innovative business, please contact CPALI at [ccraig@cpali.org](mailto:ccraig@cpali.org).

## Education and Outreach

We are pleased that we are continuing to collaborate with Professor Olga Ramilijaona, Department of Entomology, University of Antananarivo to train students to do basic research on silk producing Lepidoptera. We hope that we will be working with a new DEA student in the coming year and are keeping our fingers crossed that grant funds will be received. Eugenie Raharisoa, of Ny Tanintsika, joined with CPALI to exhibit wild silk products in a Cultural Survival Fair that was held in Rhode Island in August. CPALI's work was presented by Catherine Craig at the annual meeting of the Entomological Congress of Europe held in Izmir, Turkey, in September. In October, Cay was invited to Washington, DC to participate in a workshop of FRAME, a USAID-supported organization. CPALI is now featured on the websites of [Art for the Animals](#), [Ashoka's Changemakers](#), [African Conservation](#), [IUCN Conservation for Poverty Reduction](#), [Conserve Africa](#) and [FRAME](#).

## Board of Directors

We are pleased to announce that Matthew Hatchwell joined the Board this year. Matthew is currently the European coordinator for WCS and previous in-country coordinator for Madagascar. He brings substantial experience in conservation program management and development, management planning, and biodiversity research applied to conservation practice and policy. He is a much needed and valuable addition to our board.

We are sad to announce that Natalie Hahn and Hans Herren have resigned from the CPALI board due to other commitments. Both Natalie and Hans were founding members of CPALI and we greatly appreciate their commitment to CPALI and assistance in pushing CPALI ahead. They, fortunately, have agreed to act as board advisors.

The current board members are:

May Berenbaum, PhD. Swanlund Professor at the University of Illinois Champaign-Urbana and Head of the Department of Entomology

Leslie Brunetta. Free-lance writer

Catherine Craig, PhD. *CPALI* founder and President, Research Associate, Harvard University

Matthew Hatchwell, PhD. European Coordinator for the Wildlife Conservation Society (WCS)

Jacob Mulegetta, PhD. Kirby Laing Lecturer in the School of Engineering at Surrey University

Walter Simons. Founder of Industry Council for Development.

Robert Weber, PhD. Director, TIAX LLC.

### *CPALI Publications*

2006 Razafimanantsoa, T., O. Ramilijaona, and C. L. Craig. 2006. Indigenous silk moth farming for communities surrounding Ranomafana National Park: report on a feasibility study. *Madagascar Conservation and Development* . Vol 1. (*In press*).

Weber, R.S. J. Portelese and C.L. Craig. (in prep.). Production of wild silk textiles to support Madagascar's conservation and poverty alleviation goals.

### *Thanks to our partners and supporters.*

CPALI is grateful to the National Geographic Foundation for funding our research and to the Wildlife Conservation Society for matching funds and in-kind support to our field expeditions. Harvard University has provided substantial in-kind support to C.L. Craig for which we are grateful. We also would like to thank the Timberland Company for its generous donation of boots to our field staff. We thank Art for the Animals for adding CPALI to its website and working to generate donations for our work and thanks to MadImports for supporting our work by adding Ny Tanintsika scarves to their product line. Finally, we thank The Environmental Club of Westlake High School in Austin Texas, and Professor May Berenbaum for a generous financial contribution.



## Financial summaries

### CPALI Consolidated Financial Statement

All amounts in US Dollars

Figures for 2006 include estimates for December

#### Operating Revenues and Expenses

<b>REVENUE</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>
Grants	25,000		26,000
Donations	15,038	2,841	150
CPALI silk sales net revenue		4,645	4,359
In kind	1,476	2,906	5,241
Investment income			203
<b>Total revenue</b>	<b>41,514</b>	<b>10,392</b>	<b>35,953</b>

#### EXPENDITURES

Research expenses	18,422	18,352	14,074
Professional fees*	1,037	1,000	1,523
General and Administrative**	2,861	812	5,630
Depreciation		316	268
Website development			1,800
<b>Total Expenses</b>	<b>22,320</b>	<b>20,480</b>	<b>23,295</b>

#### Assets and Liabilities

##### Assets

Cash and cash equivalents	19,194	6,182	16,584
Investments		1,841	2,038
Silk inventory			900
Capital Equipment		2,074	1,806
<b>Total Assets</b>	<b>19,194</b>	<b>10,097</b>	<b>21,328</b>

##### Liabilities

Advances and commitments		1,269	0
<b>Total liabilities</b>	<b>0</b>	<b>1,269</b>	<b>0</b>

**Net Assets** **19,194** **8,828** **21,328**

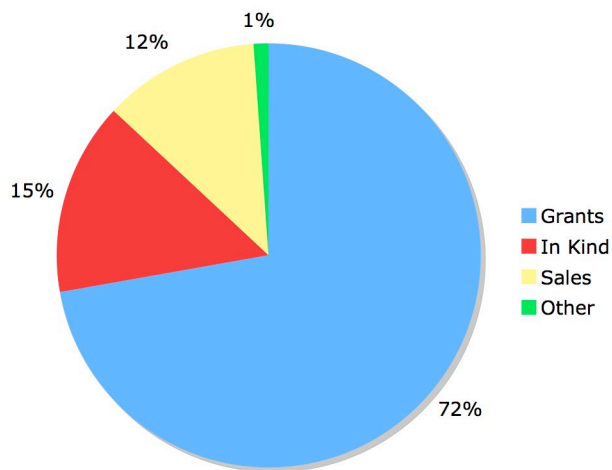
**Total Liabilities and Net Assets** **19,194** **10,097** **21,328**

\*Professional fees are for trademarking Rainforest Silk Cooperative

\*\*G&A includes office expenses, travel, subsistence, communication and silk marketing

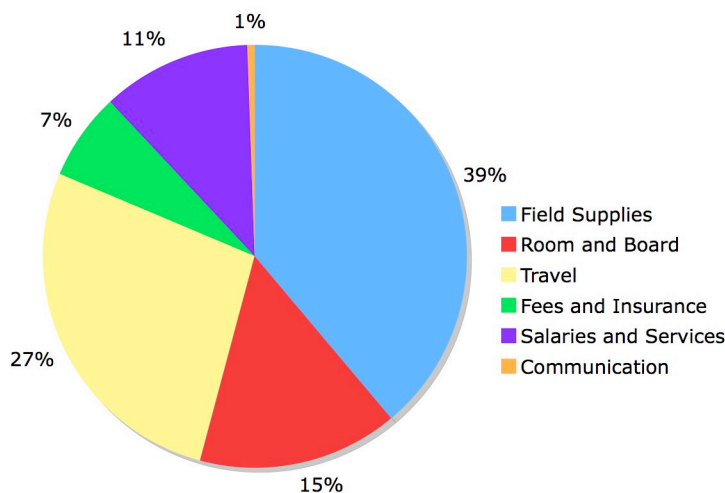
## Graphical summary of finances

### Sources of Funding



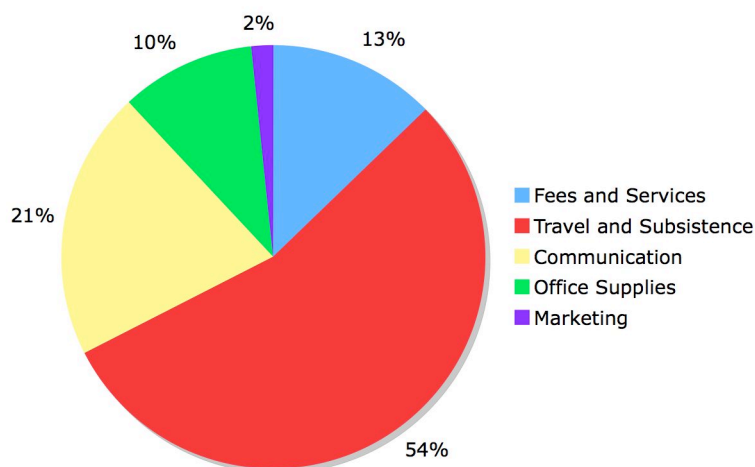
CPALI's primary source of income comes from grants. Sales revenues were earned from silks sold to New England boutiques, seasonal fairs and colleagues.

### Research Expenses



CPALI's primary research expenses are field supplies and transportation to Madagascar and within Madagascar.

### Operating Expenses



The bulk of CPALI's operating expenses result from communications and travel to its annual meetings. The percentage spent on services was to finance the trademark Rainforest Silk Cooperative.

## How you can help CPALI

We appreciate any and all donations of time, money equipment, stocks, frequent flyer miles, Amtrak miles – see below what your dollars will allow us to do. All of your gifts and donations are tax deductible. Donations can be made by credit card through [PayPal](https://www.paypal.com) directed to [ccraig@cpali.org](mailto:ccraig@cpali.org), or by sending a check made out to CPALI to:

CPALI  
221 Lincoln Road  
Lincoln, MA 01773

## What your funds will provide:

\$10

2 days of manual labor  
1 Tarp for camping

\$25

Fanny pack for field assistant  
Rain gear for team member

\$50

Food for expedition for 3 days  
Backpack for field assistant

\$75

One-month salary for field assistant  
Sleeping bag  
Hiking boots for a team member

\$100

Labor costs to build plant nursery

\$150

Boat and fuel for one round trip Maroantsetra-Masoala-Marantsetra  
One month rent for CPALI field house  
6 porters, 6 days labor in field  
A tent

\$300

1-year Medevac insurance for project workers  
Project bicycle

\$500

Expedition costs for 10 days  
1-month salary for Field Manager



\$1000

8-month support and transport for Malagasy student to work with the project  
12-month support of plant nursery manager  
12 Month support of silk moth nursery manager  
Computer for field project manager

\$2000

Materials for local community to build a weaving and spinning center  
Materials to build an egg rearing facility  
Purchases one floor loom for community

\$5000

Gene sequencing needed for moth identifications  
Two round-trip airfares US-Madagascar

\$10000

Year salary for Program manager in Maroantsetra

### Donate stock

Please contact Catherine Craig ([ccraig@cpali.org](mailto:ccraig@cpali.org)) for information regarding stock donations.

### Donate used equipment

Tents, tarps, backpacks, field boots and rain gear  
Laptop computers – either PC or Apple

### Donate frequent flyer miles

We make a minimum of 3 trips per year to Madagascar. Frequent flyer miles for Air France and its sky team partners would be greatly appreciated.

All members of the Rainforest Silk Cooperative need frequent flyer miles to attend partner meetings in India, Indonesia, Madagascar and Namibia as well as miles to attend the New York International Gift Fair.

### Donate Amtrak miles

Major marketing centers are located New York and Washington, DC. We would greatly appreciate donations of Amtrak miles to allow us to travel more frequently.

### Purchase RSC products

Give your friends products produced by the Rainforest Silk Cooperative – perfect for any occasion or holiday: <http://www.rainforesilk.org>

Give a gift donation to CPALI through [Art for the Animals](#) fund

### Volunteer

The RSC needs volunteer marketers to sell products at tradeshow, festivals and local boutiques and stores.