

The background of the cover features a blurred image of a person wearing a red lab coat and a white lab coat, likely in a laboratory or field setting. In the foreground, there is a basket filled with dark, porous biochar. The top of the image is overlaid with a pattern of green vertical bars and circles of varying heights and widths, creating a modern, scientific aesthetic.

# FY24 Annual Report

**Scaling Biochar Impact to  
Revitalize Environment,  
Economies, Societies**



**International  
Biochar  
Initiative**

**600,000 mt**  
or more of carbon  
dioxide removal in 2023  
potentially represented  
by biochar

– 2023 Global Biochar  
Market Report

## Why Biochar?

Biochar not only removes carbon from entering the atmosphere; it also provides valuable economic, environmental, and social benefits for agriculture, the built environment, and other sectors.

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# 90%

## of carbon dioxide removal in 2023 was sourced from biochar

– CDR.fyi



**Biochar can potentially remove up to 6% of global emissions annually**

(the approximate equivalent of 3 billion tonnes of CO<sub>2</sub> or the total emissions of 803 coal-fired power plants in one year)

– 2023 Global Biochar Market Report

## Update from the Board Chair and Executive Director

As we reflect on 2023, we recognize this as a pivotal moment of growth for the biochar industry and the possibilities for biochar carbon removal (BCR).

We have seen biochar take the lead, accounting for over 90% of global deliveries, as reported by CDR.fyi. This year, based on International Biochar Initiative (IBI) and US Biochar Initiative market research, we estimate global biochar production has reached a significant milestone, with at least 350,000 metric tonnes produced annually, representing a potential 600,000 metric tonnes or more of BCR. Projections from the market report show a pathway for a gigatonne of BCR by 2040 with similar, sustained growth.

To accelerate this growth, developing high-value, large-volume, end-use markets for physical biochar remains a top priority, as well as increasing knowledge about biochar, for internal and external biochar industry stakeholders.

At IBI, we firmly believe in the vast potential of biochar as a climate mitigation tool. Biochar is part of a system, serving as a sustainable input to agricultural and industrial materials supply chains, while offering practical solutions that are relevant for high-tech, low-tech, rural, urban, and most geographic environments. In an era marked by increasing climate change impacts, an expanding biochar industry provides a unique opportunity to address a myriad of issues, with the ability to foster economic growth and resilience in rural communities and particularly in the Global South, in areas at the forefront of climate change impacts.

This growth can be seen within our organization as well, with the IBI team expanding to cover fundraising, operations, and – of particular importance – expansion of our programs and education offerings. We launched a new online course, trained 70 people from 18 countries at the Biochar Academy in Thailand, published a how-to guide for biochar and the voluntary carbon market, and are creating projects with seven sister biochar organizations. We began a partnership with Carbon Standards International to improve biochar standards and increase education for those seeking them. And, we are orienting the next year to be even busier with higher impact!

As we reflect on the past growth year at IBI, we acknowledge an urgent need for global leaders to integrate this powerful solution into national and regional climate strategies. Biochar secures carbon safely and durably, and it also supports a circular economy by enhancing food security, decarbonizing the built environment, and removing pollutants from water and soil. All of these benefit society and help communities adapt as well as mitigate climate change.

To remain on the 1.5°C pathway, we must accelerate biochar adoption and ensure it is a vital component of our climate action toolkit. With optimism and determination, we look forward to continuing this critical work together.



**WENDY LU  
MAXWELL-BARTON**  
Executive Director

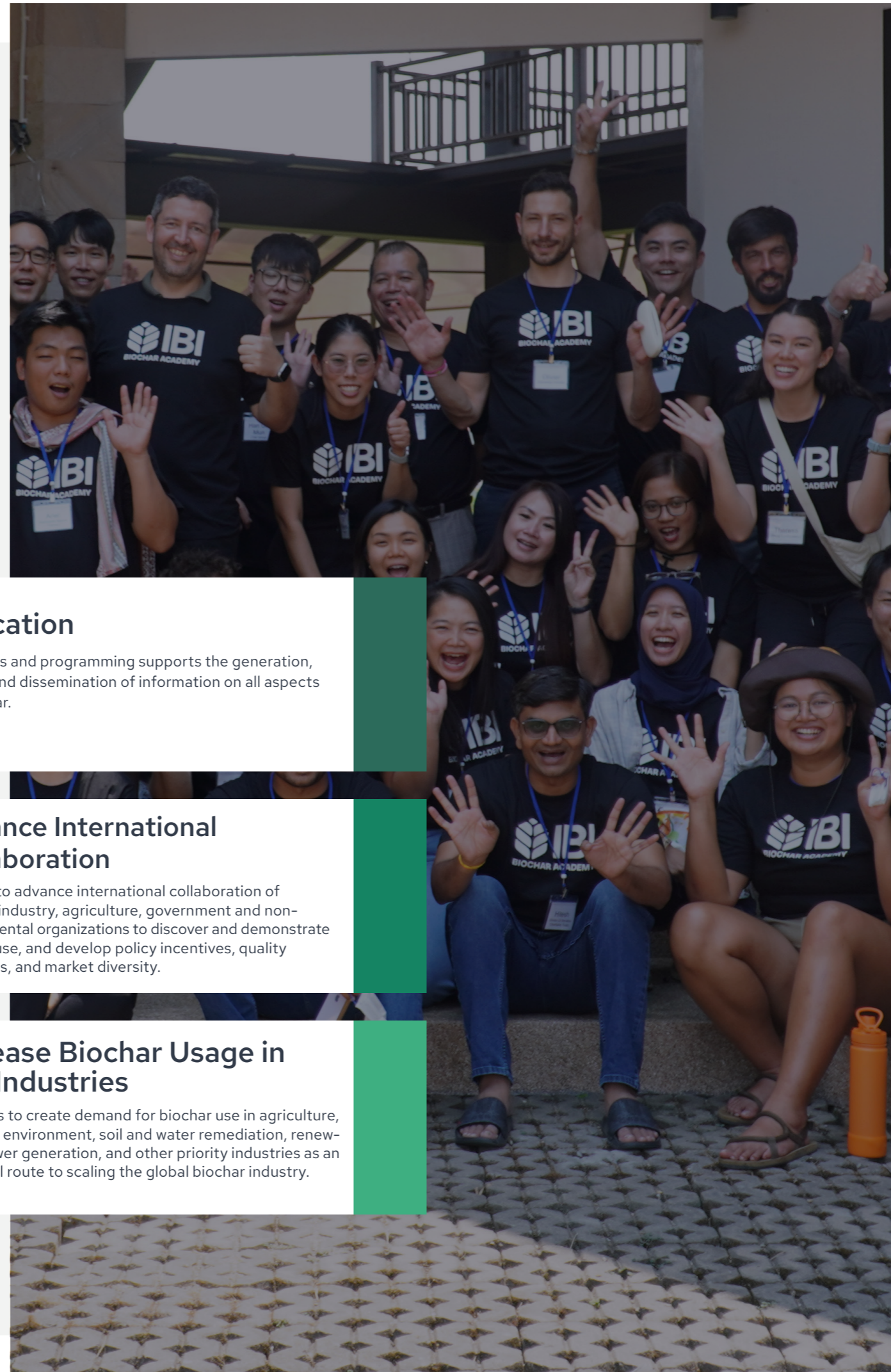


**LUCIA BRUSEGAN**  
Chair of the Board, Starter

# What We Do

Founded in 2006, the International Biochar Initiative (IBI) provides a platform for fostering stakeholder collaboration, good industry practices, and environmental and ethical standards to support biochar systems that are safe and economically viable.

As the global network for a rapidly-scaling biochar industry, IBI supports its 600+ members across 60 countries through networking, education, and demonstration initiatives.



# Programs and Workstreams

The 2023–2024 fiscal year was one for scaling biochar’s impact, from the ground up. Explore highlights from IBI’s work this past year.



## Empowering a Sustainable Future

In October 2023, IBI hired full-time Education Manager, Hannah Calloway, an environmental and climate change educator. This role is dedicated to envisioning, strategizing, designing, and implementing a unique Biochar Education Program executed through dynamic online learning and in-person training projects.

As part of the team, Hannah leverages her decade-long practice of learning design to develop localized and scalable capacity-building initiatives.

This work is done in collaboration with local community representatives, subject matter experts, and industry leaders as part of a global, cross-sector effort to scale the biochar industry and adapt to

the greatest environmental challenges of our time.

The creation of this role has significantly scaled IBI’s ability to design and implement Biochar Education training programs in-person and online.

In FY24, IBI delivered two large in-person training events, launched two new online learning courses, released four publications, and strategized to continue scaling these efforts into FY25 while fostering new partnerships and training more biochar practitioners than ever.

## Education

IBI events and programming supports the generation, review, and dissemination of information on all aspects of biochar.



## Advance International Collaboration

IBI aims to advance international collaboration of science, industry, agriculture, government and non-governmental organizations to discover and demonstrate biochar use, and develop policy incentives, quality standards, and market diversity.



## Increase Biochar Usage in Key Industries

IBI works to create demand for biochar use in agriculture, the built environment, soil and water remediation, renewable power generation, and other priority industries as an essential route to scaling the global biochar industry.



In-Person Training Highlight

# Biochar Academy 2024: Thailand

IBI's Biochar Academy is an immersive in-person, multi-day, hands-on workforce development course designed to equip emerging and seasoned biochar professionals with the skills and knowledge necessary to champion biochar's myriad benefits, in their communities and beyond.

The unique, experiential learning program blends expert presentations and demonstrations with hands-on practice to engage participants with contemporary knowledge and real-world biochar production and application.

In May 2024, IBI partnered with ECHO Asia Impact Center in Thailand to train more than 70 biochar practitioners from 18 countries, while distributing 16 scholarships to regionally-based participants to facilitate access and equity.

By emphasizing peer-learning and networking, the Biochar Academy fosters innovation and strengthens the global community of biochar practitioners through place-based learning at host locations around the world.

We know that the Biochar Academy has immense growth impact on the program attendees. 100% of participants reported that this course was "very helpful" or "extremely helpful" for their careers in biochar.

Based on recent survey data one

year after our 2023 Biochar Academy, we learned that:

- 91% of attendees were still heavily involved in biochar projects in FY24
- 64% of attendees from the 2023 Biochar Academy reported collaboration with fellow participants of the event during FY24
- 91% of attendees applied the learnings and techniques from the Biochar Academy to their biochar projects in FY24



70 BIOCHAR PRACTITIONERS

18 COUNTRIES REPRESENTED

16 SCHOLARSHIPS AWARDED



## "This is Biochar"

**Moh Suthasiny Sudprasert**  
Founder of Happy Ground,  
Biochar Academy Thailand Alumni

"I believe that the solution to fix our food issues is to change the way we grow our food and protect our soil. When 26% of our emissions [in Thailand] come from production itself, I'm super excited to see biochar as a facilitator of change."

*Stay tuned for stories highlighting the people who are building the biochar industry on the IBI website in summer 2024.*



The six days of programming included two site visits to a small-scale farm and university that is researching biochar concrete.

[Read the Expanded Recap](#)



# 100% of participants found the training "very" or "extremely helpful" for their biochar careers

## EDUCATION

Online Training Highlight

# All About Biochar Course

**100%**  
of All About Biochar participants found the course "extremely helpful" for their career



In April 2024, IBI launched two online education courses as part of a new Online Education Learning Program.

IBI's online biochar education courses are designed to empower biochar professionals, farmers, carbon professionals, and more with the knowledge and skills to harness the incredible potential of biochar.

The "All About Biochar" Course is a multi-module, interactive online course that blends video excerpts of key learning outcomes from IBI's Biochar Academy with online articles and peer-reviewed research to provide a contemporary overview of the biochar industry for emerging biochar professionals.

Through engaging video lessons, interactive quizzes, and real-world case studies, participants gain valuable insights from leading experts in the field and discover how biochar can play a pivotal role in building resilient ecosystems and mitigating climate change.

In its first 30 days, the IBI "All About Biochar" Course reached 13 participants – six of whom received scholarships as members of low-income countries.

With a total of eight countries reached so far, this course has generated \$3,319 USD in revenue: a promising indicator for the potential of our revitalized online training program.

**"The course is very relevant from a technology and business perspective and covers all the aspects."**

– All About Biochar course participant



### ALL ABOUT BIOCHAR

Video excerpts + online articles + peer-reviewed research for a contemporary overview of the biochar industry.

[Learn More About the Course](#)



### 2023 BIOCHAR ACADEMY RECORDED

Expert speakers from across the industry offer detailed and nuanced insights into latest and best practices within key industry areas.

[Learn More About the Course](#)



# Sustainable Crop Residue Management for Climate Resilience in Pakistan

In 2024, IBI received a \$50,000 grant awarded from the Climate Impact and Environmental Innovation Fund (CIEIF) and a \$50,000 grant from the Indus Climate Fund (ICF).

The generous funding has made a pilot biochar project possible in the Punjab and Sindh provinces of Pakistan. The project is designed to assess the impact of utilizing biochar – made from local biomass waste – on building resilience in communities highly vulnerable to climate change.

The Punjab and Sindh regions face numerous challenges exacerbated by climate change; the poor air quality due to the common practice of open burning of crop residues, causing severe adverse effects on public health nationally, is particularly interesting for the IBI project.

Our initiative aims to transform crop residues into biochar, mitigating greenhouse gas emissions while addressing health concerns and fostering economic development for local farmers.

Additionally, the project holds the potential for carbon removal credits, as biochar is an IPCC-recognized carbon dioxide removal technology.



At least five local professionals will be trained to become certified C-Sink managers from Carbon Standards International



## Strategic Partnerships to Scale Biochar Industry Growth

IBI is orienting our development work to establish deep collaboration with funding partners, with project collaborators, as well as with companies in priority sectors in which IBI seeks to increase biochar usage and influence.

IBI has prioritized developing strategic partnerships and exploring funding opportunities to create sustainable and expanded funding to (renewably) fuel our impact. As part of this effort, we submitted grants with five new NGO partners, and are working with for-profit organizations on

education, advocacy, and other efforts.

Additionally, we have engaged fundraising research and submission support from two highly qualified organizations with deep climate change and international development expertise: Written Progress and Climate Finance Solutions, both of which will continue to support IBI's development program particularly in light of IBI Development Manager Mehdeen's departure at the end of June 2024.

Funded Project Highlight

# Bezos Earth Fund Greenhouse Gas Removal Ideation Prize

**IBI Named a Phase I Finalist in the Bezos Earth Fund Greenhouse Gas Removal Ideation Prize for “The International Biochar Atlas: A Decision Support Tool for Soil Health & Carbon Removal”**

This Phase 1 \$4,000 prize will pay for project development to submit a full proposal for the Phase 2 Prize.

The project goal is to fill the knowledge gap and provide a first-of-its-kind biochar-use resource for agricultural stakeholders by creating an International Biochar Atlas.

This Atlas will include a Biochar Selection Tool that connects farmers, extension agents, researchers, and other biochar users with local biochar products that address their soil

health concerns.

This project will be executed in partnership with USDA-ARS, American Farmland Trust, and the US Biochar Initiative.

With this Tool, a biochar user can input soil data and soil health priorities to be matched with compatible biochar products.

This tool will be created by leveraging international soil maps and data from EnvirometriX, and compiling biochar characterization data from the US and the

European Charchive.

This tool will simultaneously drive the adoption of climate-smart agricultural practices, bolster international biochar markets, and support developing economies that may benefit from waste biomass sales.

**To be announced  
publicly in Summer  
2024!**



## DEVELOPMENT

# 2023 Virtual Annual Symposium

IBI's 2023 Annual Symposium focused on the interrelated, crucial areas the biochar industry needs to strengthen to meet its potential as a circular climate solution.

With nearly 400 participants from 40 countries, 40+ speakers, 30+ exhibitors, plus our amazing sponsors US Biochar Initiative, Carbonfuture, KMW Energy Systems, Puro.earth, and Pyreg, plus IBI's first media partner, the Carbon Herald, we had a vibrant three days of presentations, networking, and collaboration.

Additionally, the 2023 symposium attracted a new audience from the biochar industry and other relevant industries. We are grateful to the 79 new participants who attended the symposium and welcome them to our global community!



### Biochar Pitch Competition

featuring five companies from four countries, with Circonomy named as the winner by our judging panel



### Keynote by Robert Höglund

supplemented by panels on carbon markets, an overview of standards and certifications, how to stack revenue streams to create financial sustainability



### Two Biochar Industry Tool Launches

Global Biochar Map, an interactive, open-source map for biochar organizations

Global Biochar Market Research Study, helping to quantify the industry

# 400

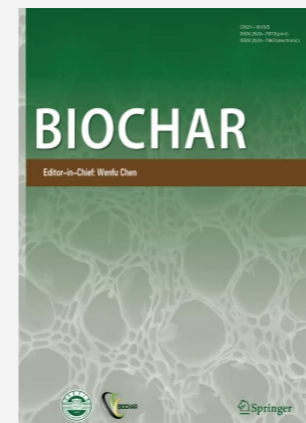
ATTENDEES REPRESENTING 40+ COUNTRIES

# 72%

INCREASE IN LINKEDIN FOLLOWERS DURING SYMPOSIUM MARKETING

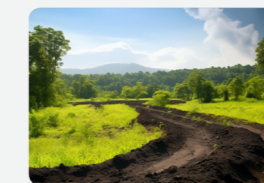
# From Knowledge to Action: IBI Publications

From peer-reviewed papers to publicly-available info sheets, our team stewarded four biochar publications in FY24.



### Biomass residue to carbon dioxide removal: quantifying the global impact of biochar

Published in the peer-reviewed journal Biochar and commissioned by IBI, ground-breaking new research showed that biochar can play a significant role in global emissions reductions at the global and national levels. The research quantifies biochar's CDR potential across 155 countries, with net removal potential on a national and global scale, assuming a sustainable supply of no purpose-grown biomass quantities.



### Containing Contaminants: Harnessing Biochar for Effective Pollution Control

The new publication serves as a comprehensive guide for policymakers, researchers, and biochar stakeholders alike, offering insights into the potential of biochar as a solution. Through research, advocacy efforts, and investments, we can accelerate the adoption of biochar technologies and significantly reduce PFAS contamination.



### About Biochar Overview

The new publication serves as a comprehensive guide for policymakers, researchers, and biochar stakeholders alike, offering insights into the potential of biochar as a solution. Through research, advocacy efforts, and investments, we can accelerate the adoption of biochar technologies and significantly reduce PFAS contamination.



### GLOBAL BIOCHAR MARKET REPORT



### 2023 Global Biochar Market Report

Showing a 91% CAGR production growth rate from 2021 to 2023, IBI and the US Biochar Initiative (USBI) released the 2023 Global Biochar Market Report. This study, the first industry-produced global research since 2015, highlights the significant strides and potential of biochar as a CDR technology, underscoring its increasing role as a climate change solution.

[Explore IBI Publications](#)



## The Global Biochar Market Report surveyed over 1,000 stakeholders from all industry subsectors, with responses from 101 countries.

# Impact Snapshot

**\$100,000**

**AWARDED TO PROPEL CLIMATE RESILIENCE IN PAKISTAN**

Our biochar project, based in two provinces, will target 40% female participation through four capacity-building trainings – with the potential to impact 500 farmers and create roadmaps to use the approach in other geographies

**67%**

of Biochar Academy participants reported new partnerships resulting from the program

**104 SCHOLARSHIPS AWARDED**

across education programming in FY24

**463**

**PEOPLE TRAINED**

through biochar education programming, representing 58 countries

**15**

**GRANTS SUBMITTED**

in collaboration with 10 strategic global partners from Africa, Latin America, and Asia

**60**

countries represented in IBI membership

**“Phase 1 Finalist”**  
for the Bezos Earth Fund \$1M Greenhouse Gas Removal Ideation Prize

**72%**

increase in social media followers

## Standards and Certifications

### Driving Confidence in Biochar: IBI and CSI Merge Standards for Industry Growth



Carbon Standards International (CSI) and IBI announced a new partnership to create stronger standards and certifications to meet the needs of a rapidly scaling biochar industry.

As the core part of this partnership, the IBI Biochar Standard – the industry’s first material standard – will merge with CSI’s World Biochar Certificate.

An expert group led by the biochar researcher and IBI Founding Member Dr. Johannes Lehmann of Cornell University will be installed to be consulted in the future on further developments of the standard,

including consideration of elements of the legacy IBI Standard.

To further support this work, IBI will develop a suite of education materials to increase understanding for CSI certification applicants about how to prepare for certification, and how to best prepare for future recertification.

These education materials will include online courses and cover all of CSI’s certifications, including the World Biochar Certificate, the Global Artisan C-Sink, among others.

IBI members will receive discounts on education programs, expected to launch later in 2024, creating a pathway to certification that is cost effective and accessible.

[MORE INFO IN 2025](#)

“As the biochar industry scales, IBI continues to work to support it with partnerships that create confidence in biochar systems. Merging IBI’s legacy standard with the World Biochar Certificate, and creating new education programs to support the companies seeking certification, creates new value for the entire biochar ecosystem, from producer to buyer.”

**Lucia Brusegan,**  
IBI Board Chair

“In the last years, biochar production has developed rapidly all over the world. In this partnership with IBI we want to offer modern standards and supporting services for the biochar industry, but also for all producers worldwide.”

**Ueli Steiner,**  
CSI CEO

# Our Growing Network

Thanks to our network of 600+ members from more than 60+ countries. Meet a few of our members across the biochar industry:



## Sustaining [Capture Bank](#)

Capture Bank finds ways to adapt existing practices in farming, forestry and fisheries to recapture valuable natural resource that would otherwise become waste.



## Business [Wakefield Agricultural Carbon](#)

Wakefield Biochar is an all-natural, certified organic soil conditioner that improves the health of any soil.



## Organization [BIOSORRA](#)

BIOSORRA brings carbon removal solutions accessible to anyone, anywhere at any time.

[View our Membership Directory](#)

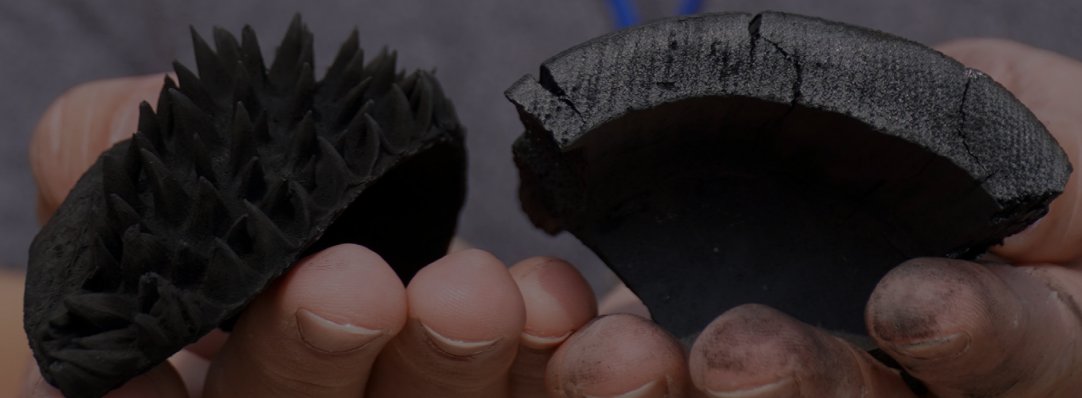


# 64%

of 2023 Biochar Academy attendees reported collaboration with fellow participants during the following year

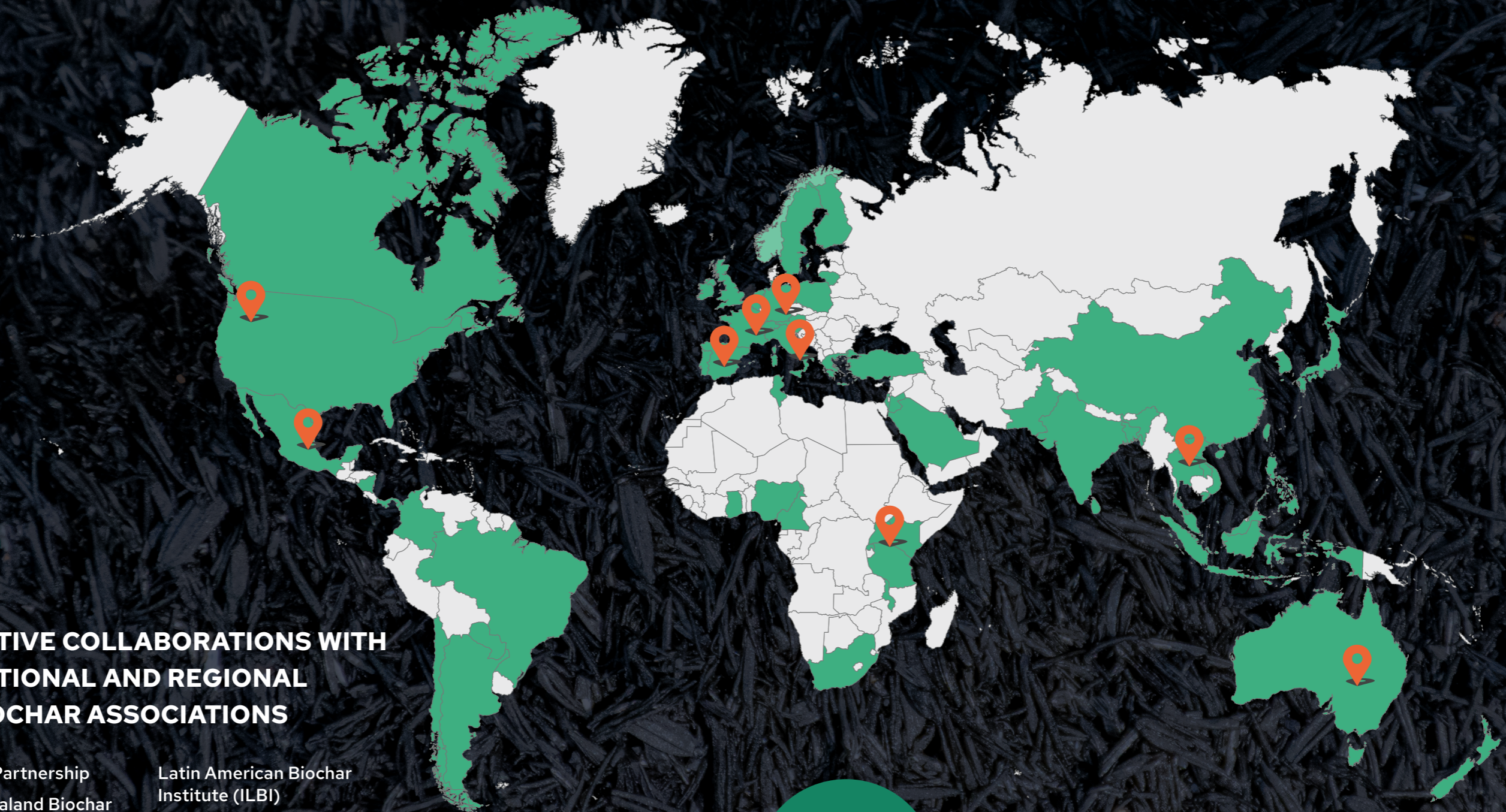
**"I'm excited to put the knowledge gained at the Biochar Academy into action! One area I'm particularly interested in exploring is the use of bamboo-derived biochar to improve crop yields and soil health in Thai agriculture."**

– 2024 Biochar Academy: Thailand participant



# IBI Membership Network

# 600+ MEMBERS



## ACTIVE COLLABORATIONS WITH NATIONAL AND REGIONAL BIOCHAR ASSOCIATIONS

- African Biochar Partnership
- Australia New Zealand Biochar Industry Group (ANZBIG)
- Asia Pacific / Thailand
- European Biochar Industry Consortium
- German Biochar e.V.

- Latin American Biochar Institute (ILBI)
- Italian Biochar Association (ICHAR)
- Spanish Biochar Association
- US Biochar Initiative (USBI)
- US Biochar Coalition (USBC)

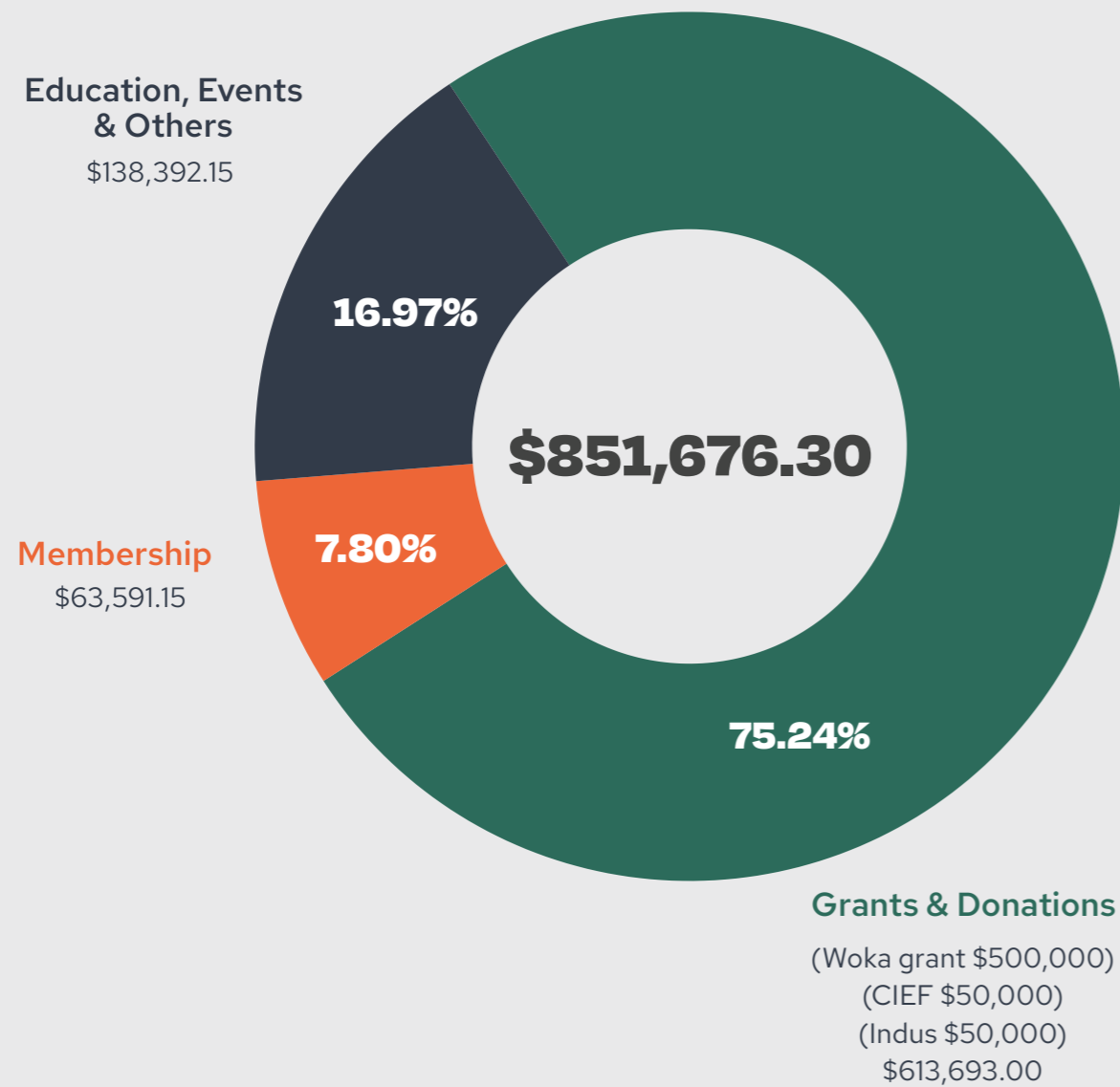
# 60

# COUNTRIES REPRESENTED

# Financial Snapshot

IBI has made significant strides in developing strategic partnerships and exploring funding opportunities to diversify our financial support.

## Revenue

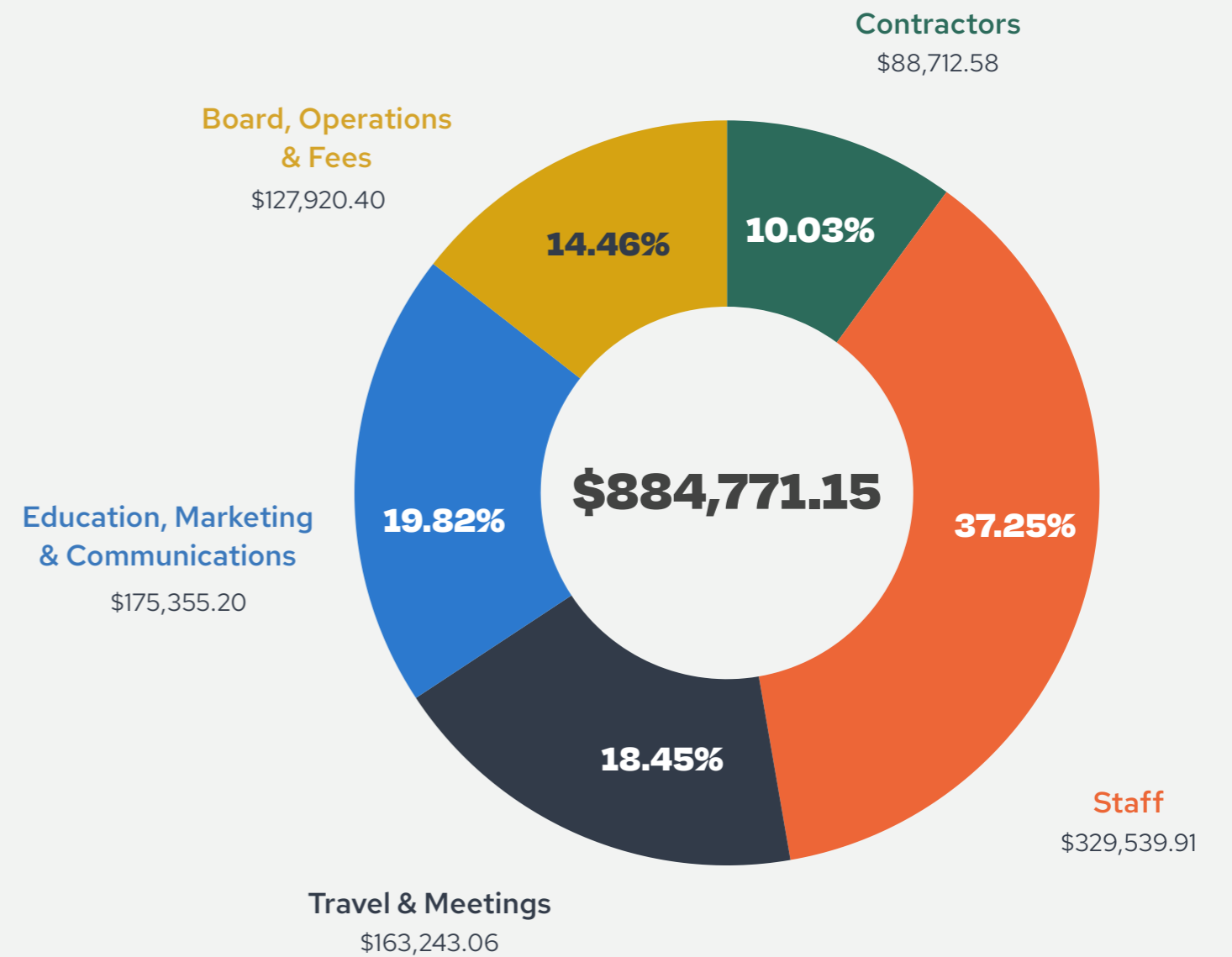


**\$16,220**

**in sponsorships  
for IBI programs  
and events**

**\$2.5 MILLION POTENTIAL IN FY25  
GRANT FUNDING STREAM**

## Expenses



# Our Organization

## Board of Directors



**LUCIA BRUSEGAN**  
Chair of the Board, Starter  
Italy



**HELOISE BUCKLAND**  
Vice Chair of the Board,  
HUSK  
Cambodia



**CLAUDIA KAMMANN**  
Hochschule Geisenheim  
University  
Germany



**VERONICA AGODOA  
KITTI**  
ASA Initiative  
Ghana



**HARN WEI KUA**  
National University  
of Singapore  
Singapore



**CRAIG LEE**  
Board Treasurer, Ciprus  
Consulting  
United States



**JOHANNES  
LEHMANN**  
Cornell University  
United States



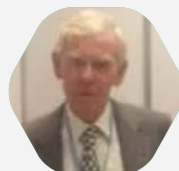
**LUISA MARÍN DE  
BLOCK**  
The Next 150  
Mexico



**TOM MILES**  
TR Miles Consulting  
United States



**HAILONG WANG**  
Foshan University  
China



**DAVID WAYNE**  
Formerly of Shell Research  
United Kingdom



**NADAV ZIV**  
Earth Biochar  
Israel

## Team



**MEHDEEN  
ABBASI**

Development  
Manager



**VALERIA  
ARAICO  
CORDERO**

Operations  
Manager



**LAUREN  
BORITZKE  
SMITH**

Climate Change  
Communications  
Lead



**HANNAH  
CALLOWAY**

Education  
Manager



**WENDY LU  
MAXWELL-  
BARTON**

Executive  
Director

## Appendices

- [2024 Biochar Academy Agenda, Survey Results](#)
- [General Biochar Academy Curriculum Overview](#) (developed FY24)
- [2023 Biochar Academy 1-Year Survey Results](#)
- [2023 Global Biochar Market Report](#)
- [Containing Contaminants: Harness Biochar for Effective Pollution Control](#)
- [Biomass to Carbon Removal – Biochar Journal](#)
- Financial Reporting (separate document)



QUESTIONS? Reach out to [info@biochar-international.org](mailto:info@biochar-international.org)



**International  
Biochar  
Initiative**

[biochar-international.org](http://biochar-international.org)