



Monday Morning Plenary

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The International Biochar Initiative: Biochar Growth on a Global Scale

Thayer Tomlinson, IBI Communications Director

IBI

Who we are....

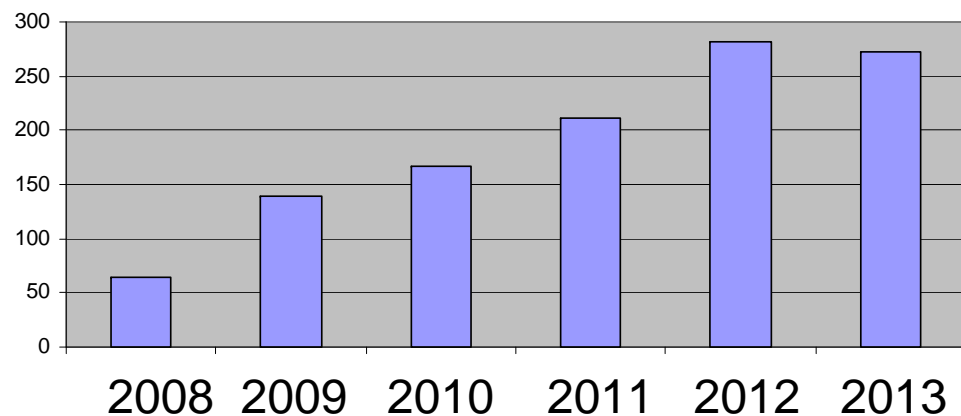
...a non-profit organization supporting researchers, commercial entities, policy makers, development agents, farmers and gardeners committed to sustainable biochar production and use.

Our mission...

...is to promote the development of biochar systems that follow cradle-to-cradle sustainability guidelines.

Looking at the Growth of Biochar Worldwide: Research

- ▶ There are almost 100 known, dedicated biochar research institutions and programs at higher education institutes globally, and new programs are starting constantly.
- ▶ The increase in peer-reviewed literature is also significant (published papers):
 - 65 in 2008
 - 139 in 2009
 - 167 in 2010
 - 211 in 2011
 - 281 in 2012
 - 272 to date in 2013



Strong Growth in Regional Groups



- ▶ 57 regional and national biochar groups



North American-based Regional Biochar Groups

United States: US Biochar Initiative

- ▶ Alaska Biochar
- ▶ Biochar Association of the Bay Area
- ▶ Biochar Hawaii
- ▶ Biochar Northeast
- ▶ Florida Biochar Initiative
- ▶ Illinois Biochar Group
- ▶ Pacific Northwest Biochar Initiative
- ▶ Pioneer Valley Biochar Initiative
- ▶ Rocky Mountain Biochar Initiative
- ▶ Seattle Biochar Working Group (SeaChar)
- ▶ Sonoma Biochar Initiative (SBI)
- ▶ SouthEast Biochar Interest Group
- ▶ Terra Preta at Michigan Technological University Working Group
- ▶ UBI Hawaii

Canada: Canadian Biochar Initiative

- ▶ Alberta Biochar Initiative
- ▶ Biochar-Ontario
- ▶ Biochar Quebec
- ▶ Biochar Yukon
- ▶ Prairie Biochar Initiative

IBI Website Statistics: Increase in Visitors

- ▶ In the past year, we have had over 160,000 unique website visits from 207 countries and territories using 126 languages
- ▶ Top visits were from: US, Canada, UK, Australia, Germany, India, China, Italy, Malaysia, Philippines, Brazil (respectively)
- ▶ The total IBI network has approximately 10,900 individuals

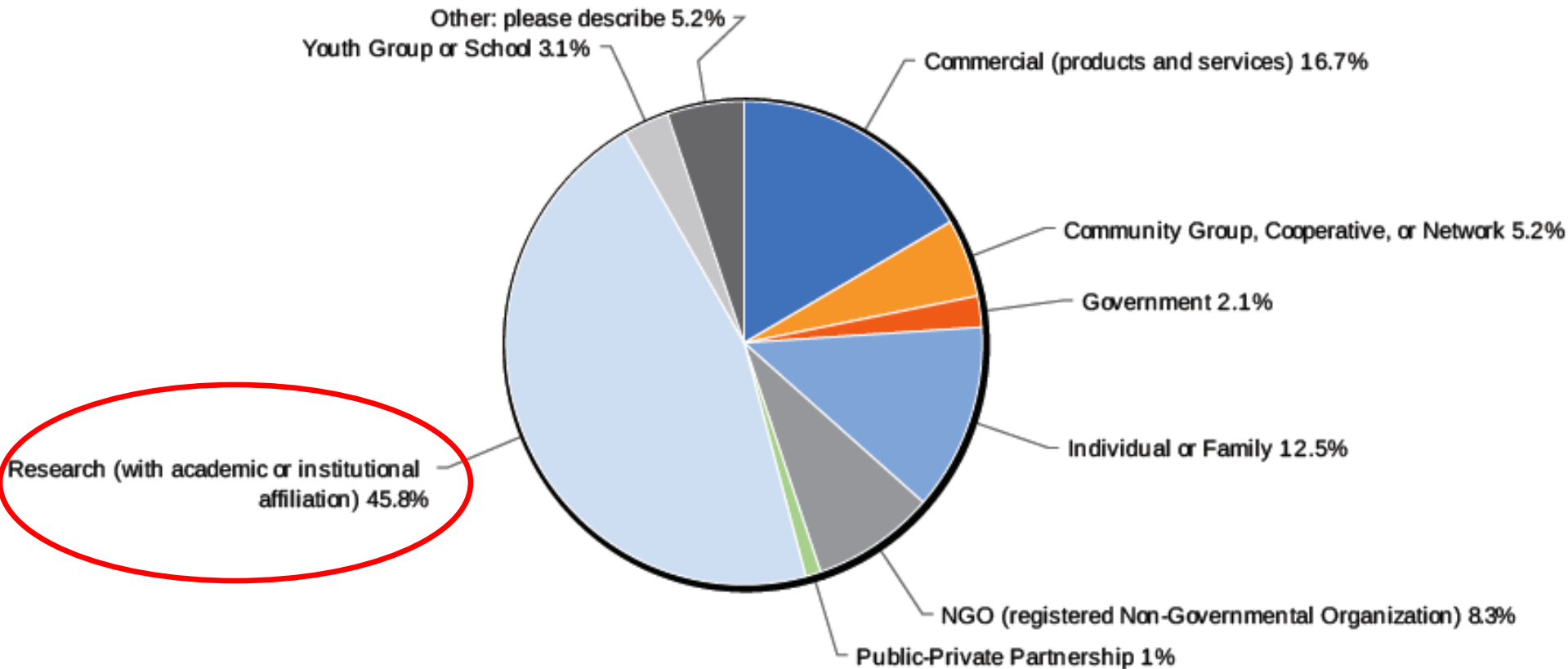
IBI Program Areas: How to Support Further Growth

- ▶ **Project and Industry Tracking**
- ▶ *IBI Biochar Standards*
- ▶ *IBI Biochar Certification Program*
- ▶ Biochar Sustainability Guidelines
- ▶ Biochar Offset Protocol Development
- ▶ IBI Information Platform
- ▶ IBI Member Services
- ▶ Biochar Commercialization Resources
- ▶ Biochar Research Support
- ▶ Biochar Policy

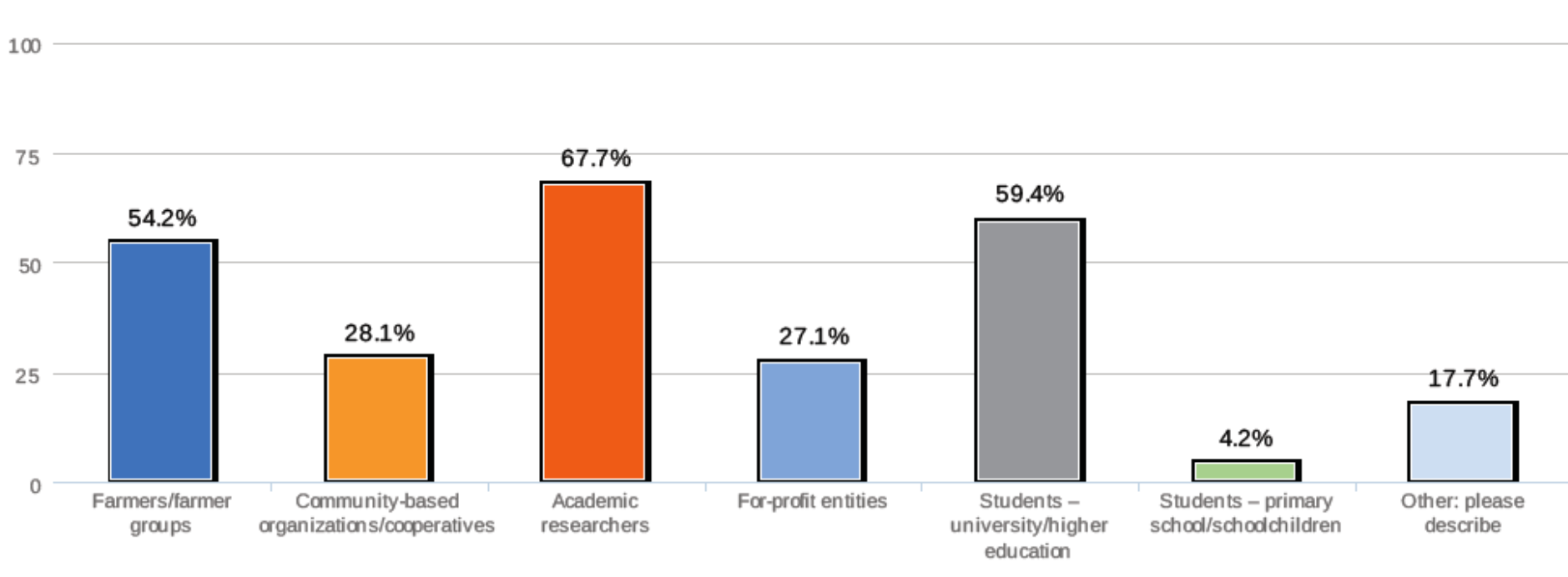
Worldwide Biochar Project Survey

- ▶ Open in May – June 2013
- ▶ 96 full surveys completed from 37 countries
- ▶ Any biochar project carried out by: universities, non-profits, commercial enterprises, community-based organizations, and other entities
- ▶ More than half the projects (respondents) were rural
- ▶ Used a wide range of feedstocks
- ▶ Many projects cite funding (lack of funding) as the primary/major constraint for moving forward
 - Funding sources were mainly “private/individual financing” or “public/government grant”

Type of Organization Leading the Project

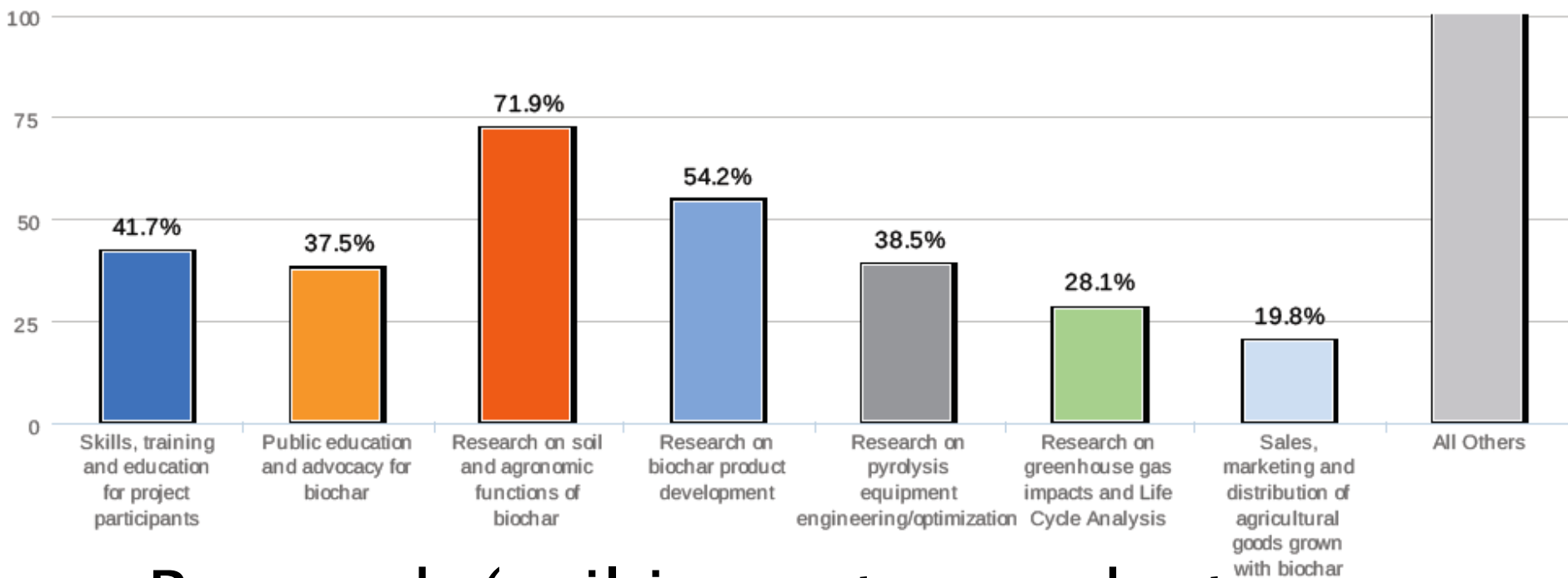


Project Stakeholders



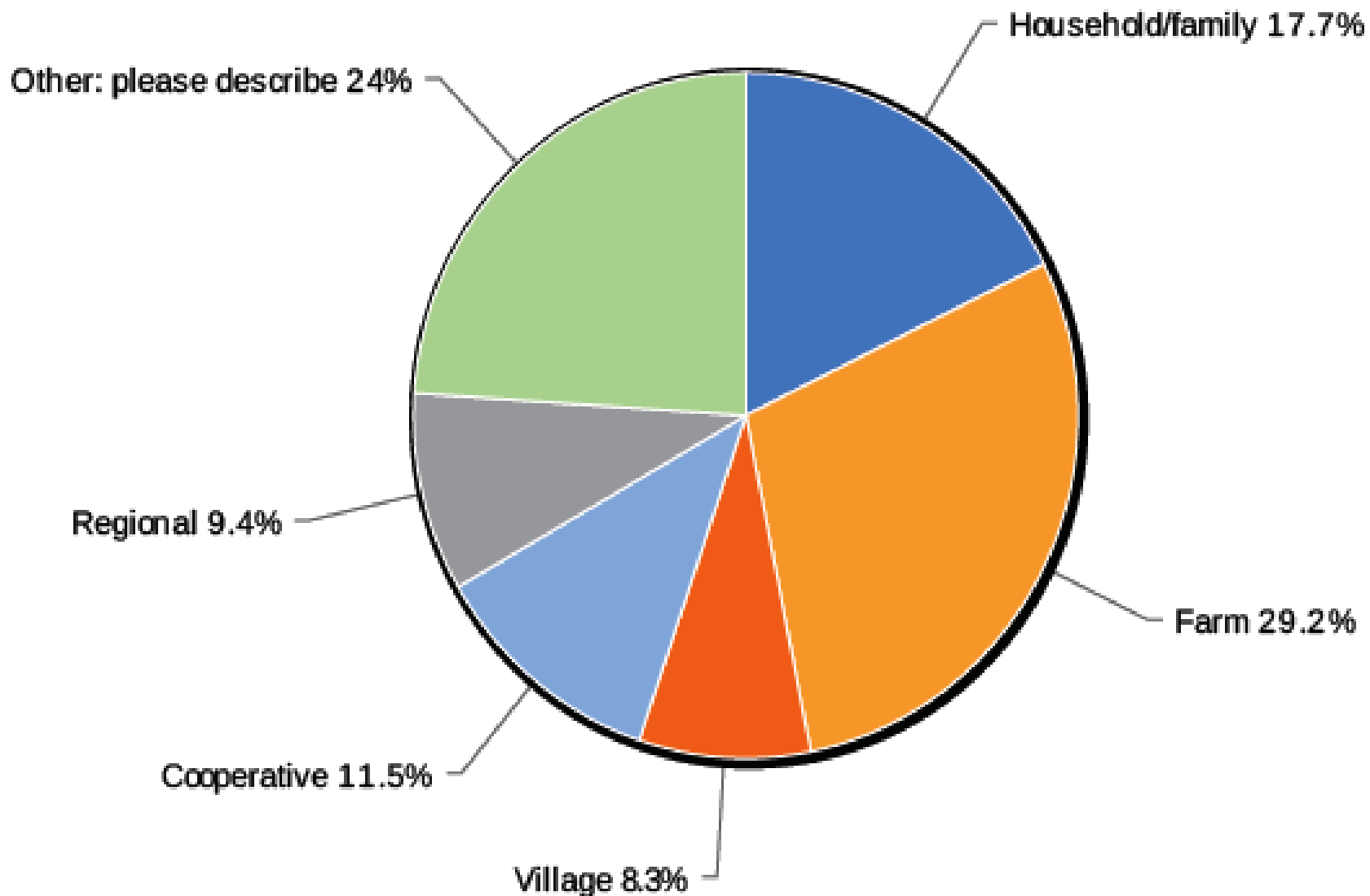
- ▶ In order of response:
 - researchers > students (university/higher education) > farmers > community organizations > for-profits

Goals of the Project

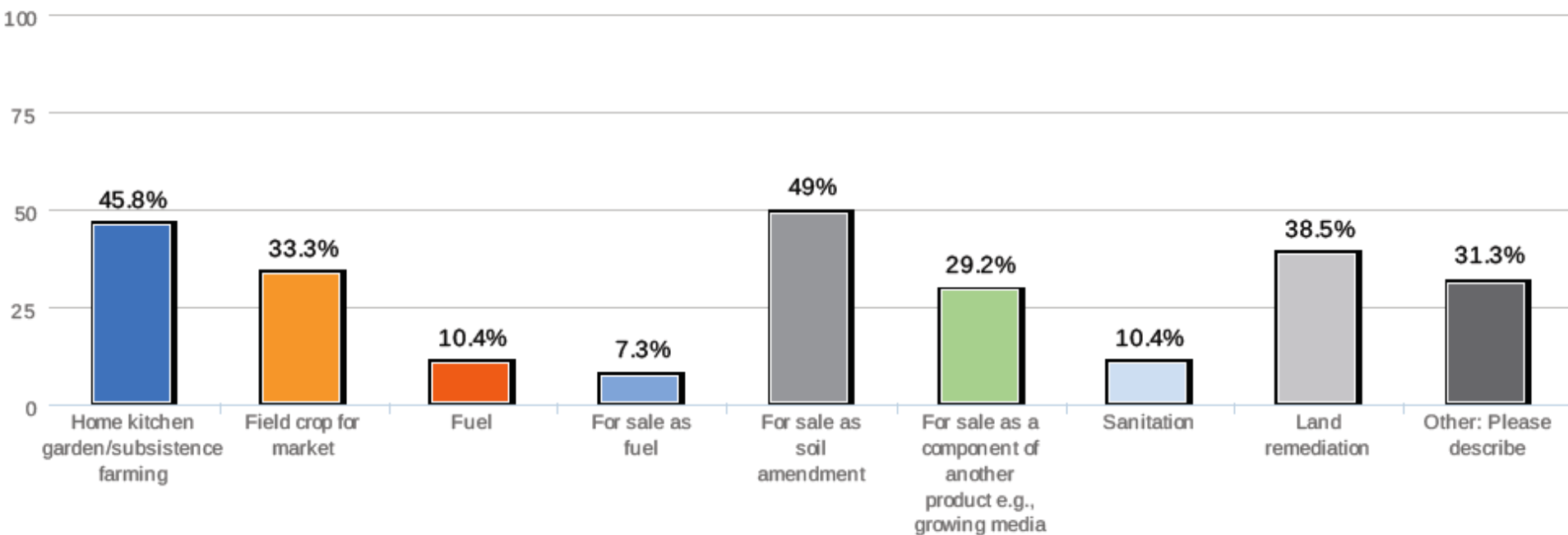


- ▶ Research (soil impacts, product development) dominates
- ▶ Skills, training, public education also important

Scale of the Production System



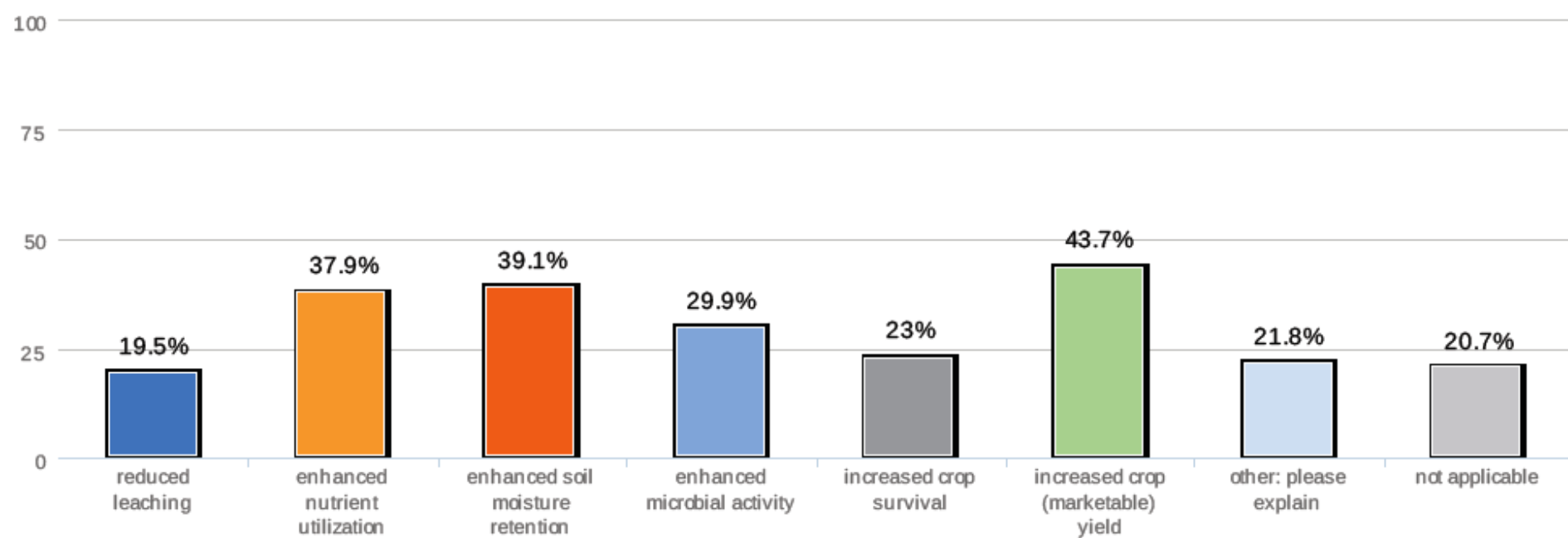
How is the Biochar Being Used?



Top 3 answers:

soil amendment for sale; garden/subsistence farming; land remediation

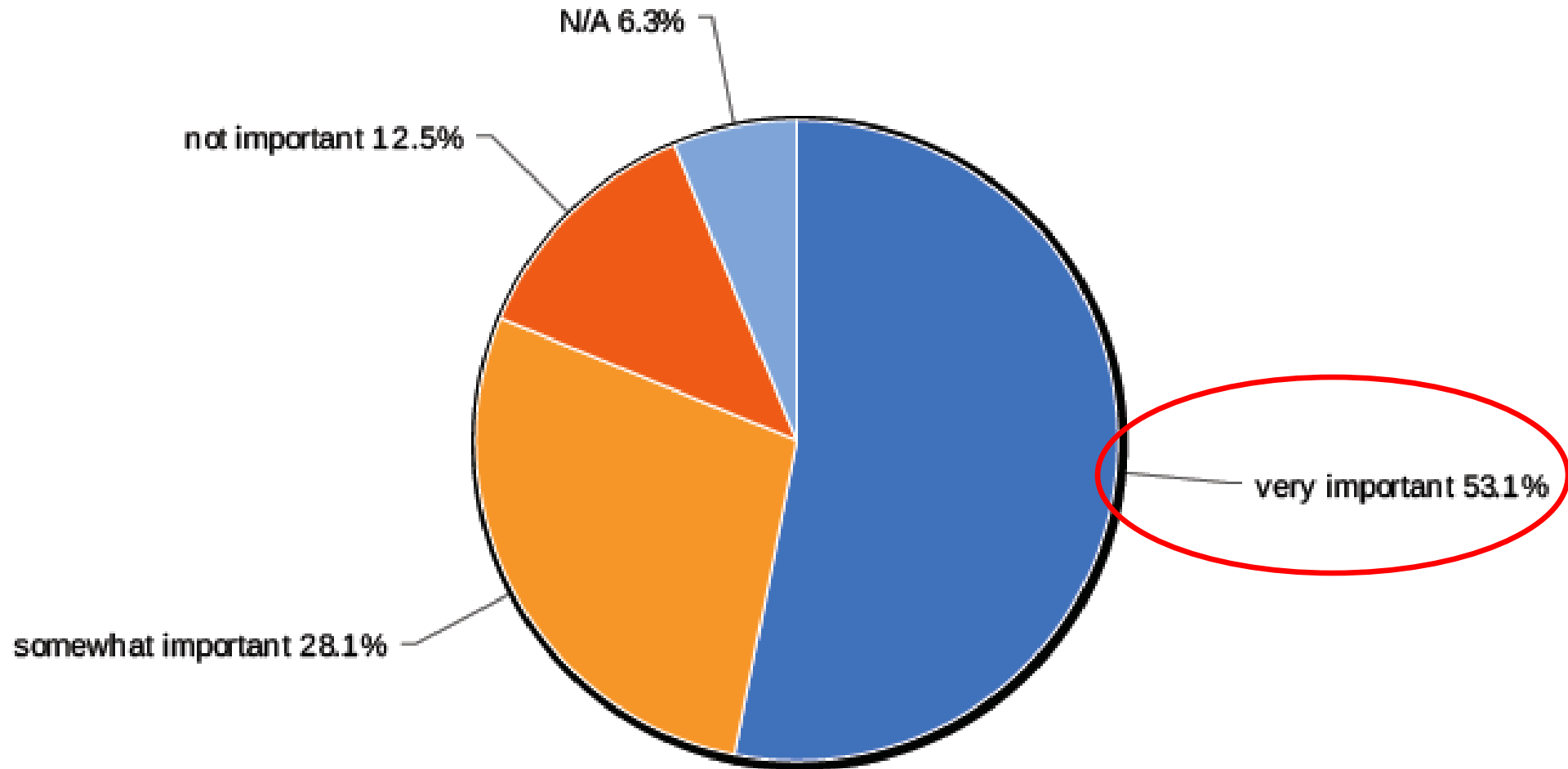
Documented Soil/Crop Responses



Top 3 responses:

Increased crop yield, enhanced soil moisture retention, enhanced nutrient utilization

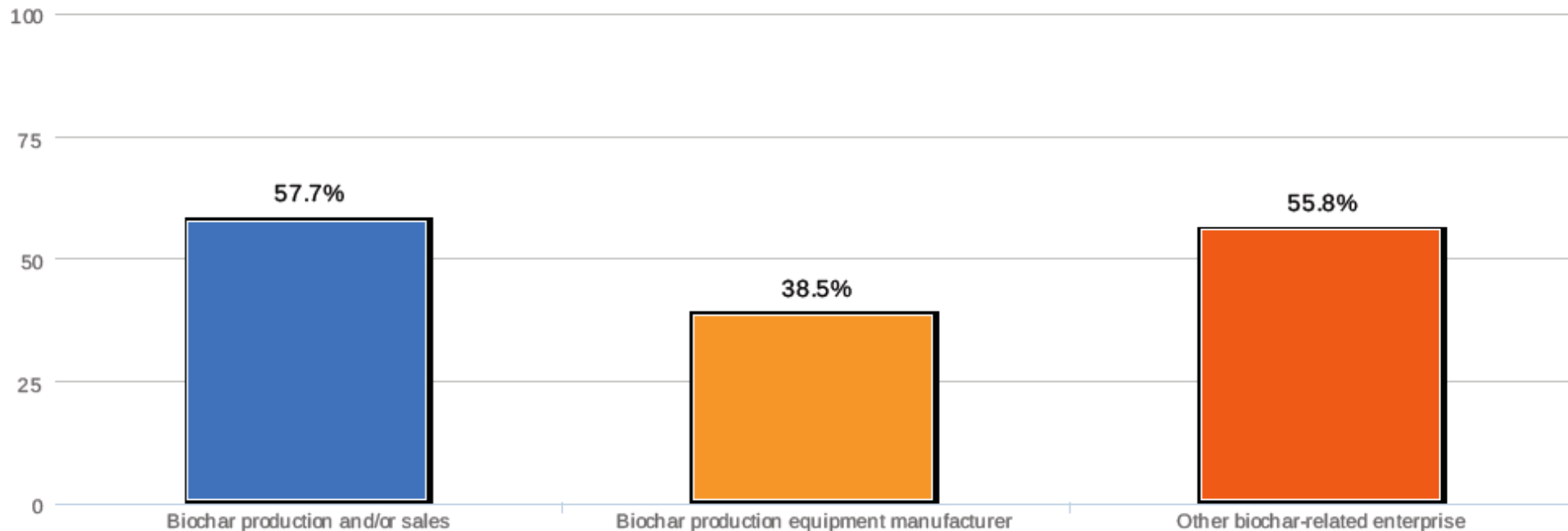
Importance of Carbon Sequestration Benefits to the Project



Industry Survey to Track Commercialization

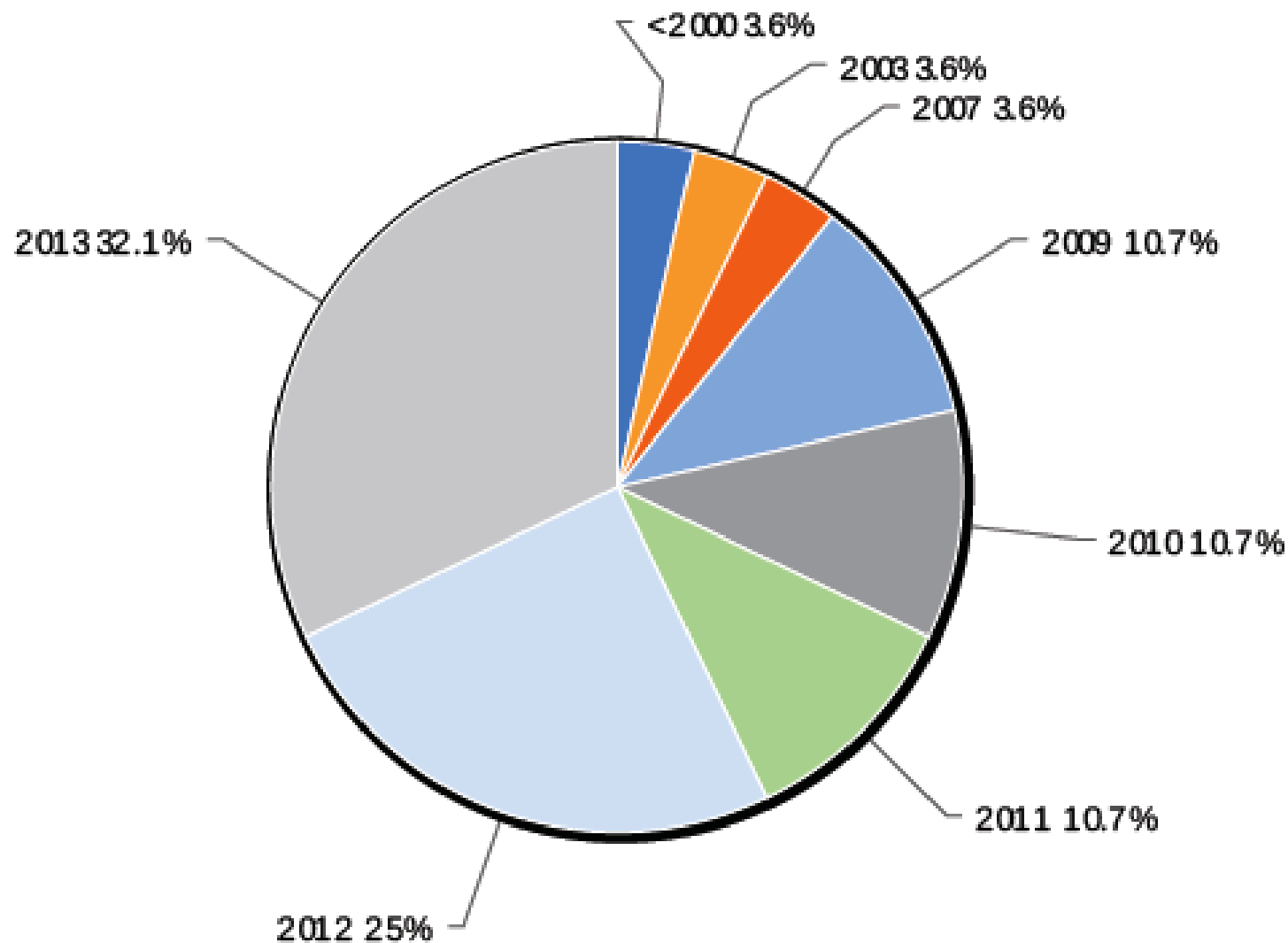
- ▶ Created a survey; open August – September 2013
- ▶ Specific to those entities with commercial interest in biochar:
 - Selling biochar as a product
 - Selling biochar technology
 - Selling biochar services (consulting, legal, testing, etc)
- ▶ 52 full responses from 20 countries

In Which Sector Does the Business Operate?

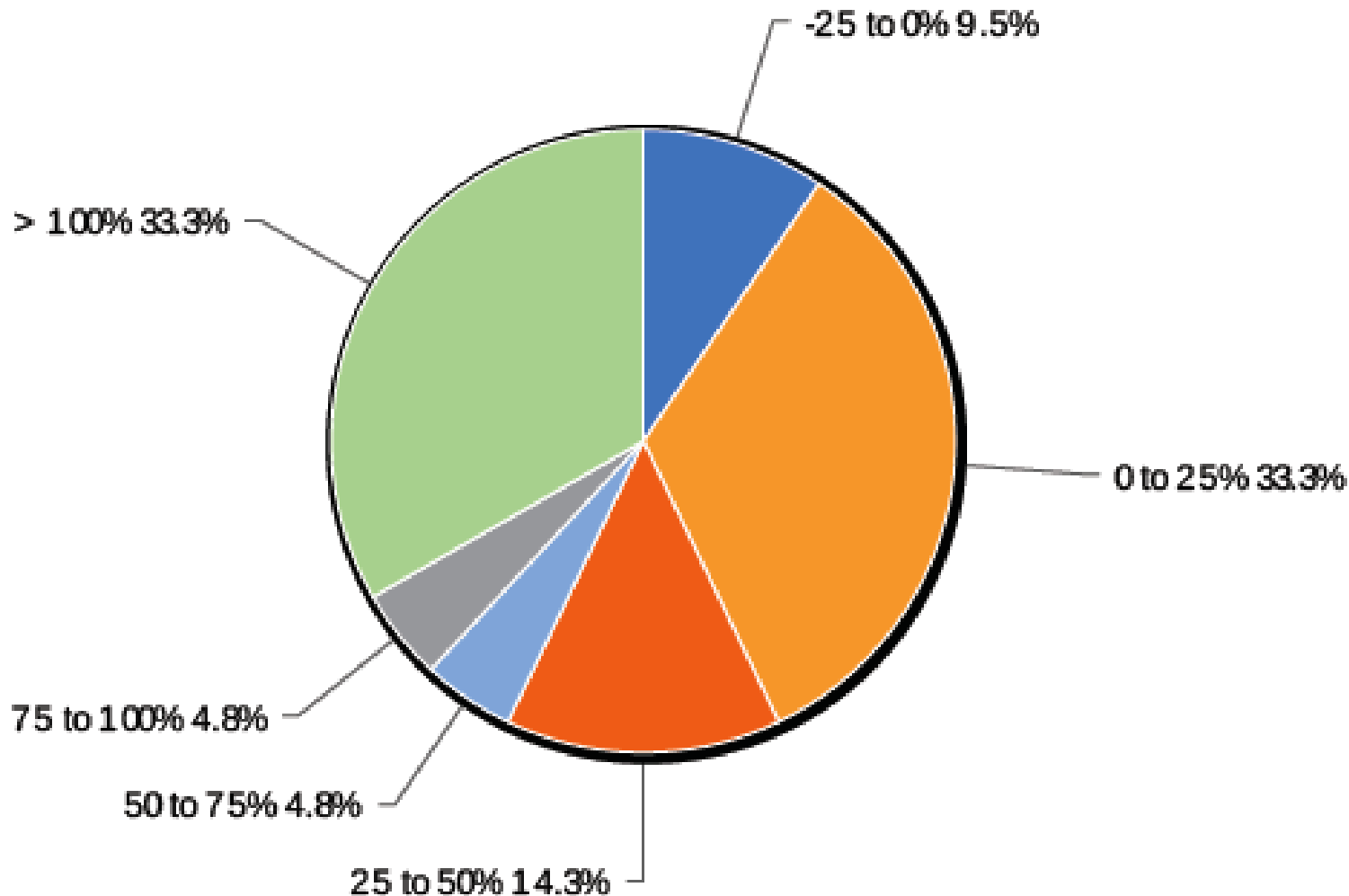


- ▶ Some respondents answered yes to more than 1 of these questions

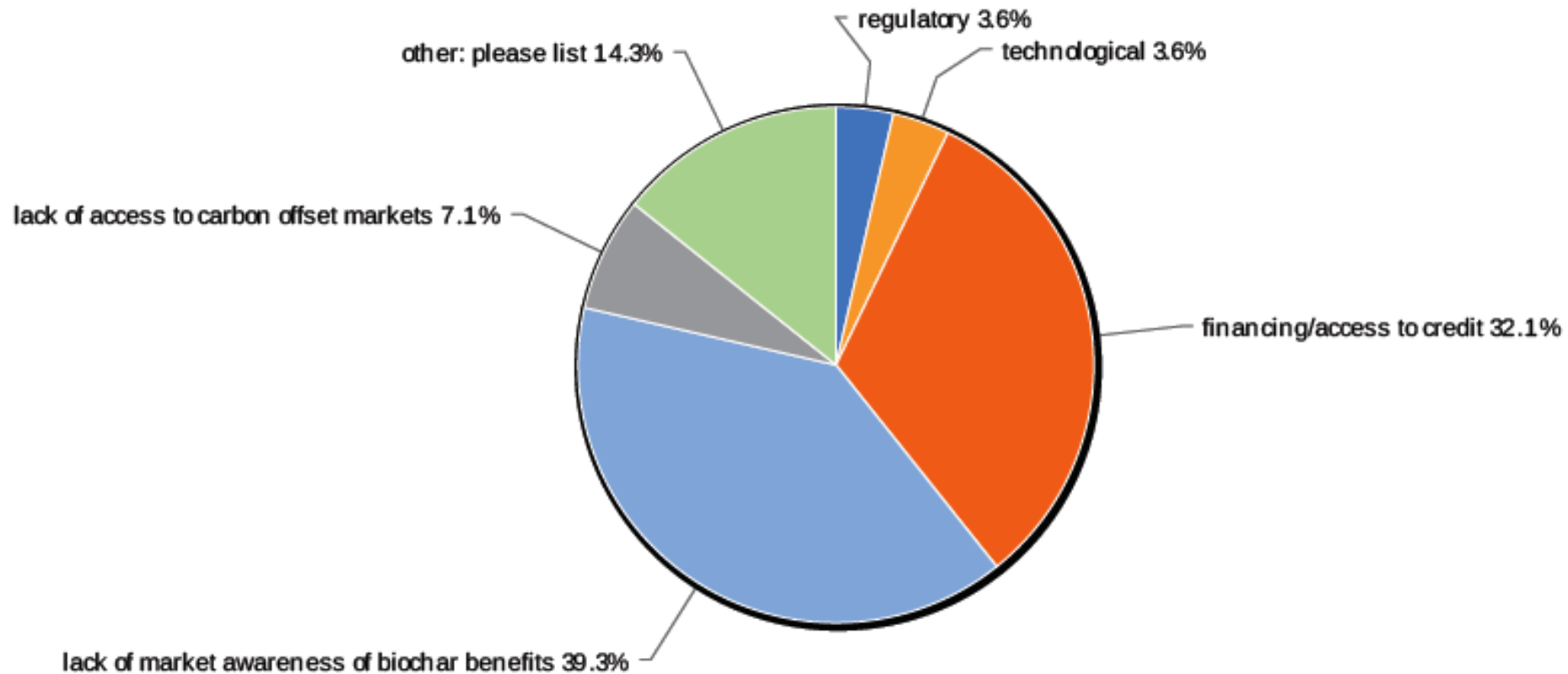
For Biochar Sellers, What Year did Operations Begin?



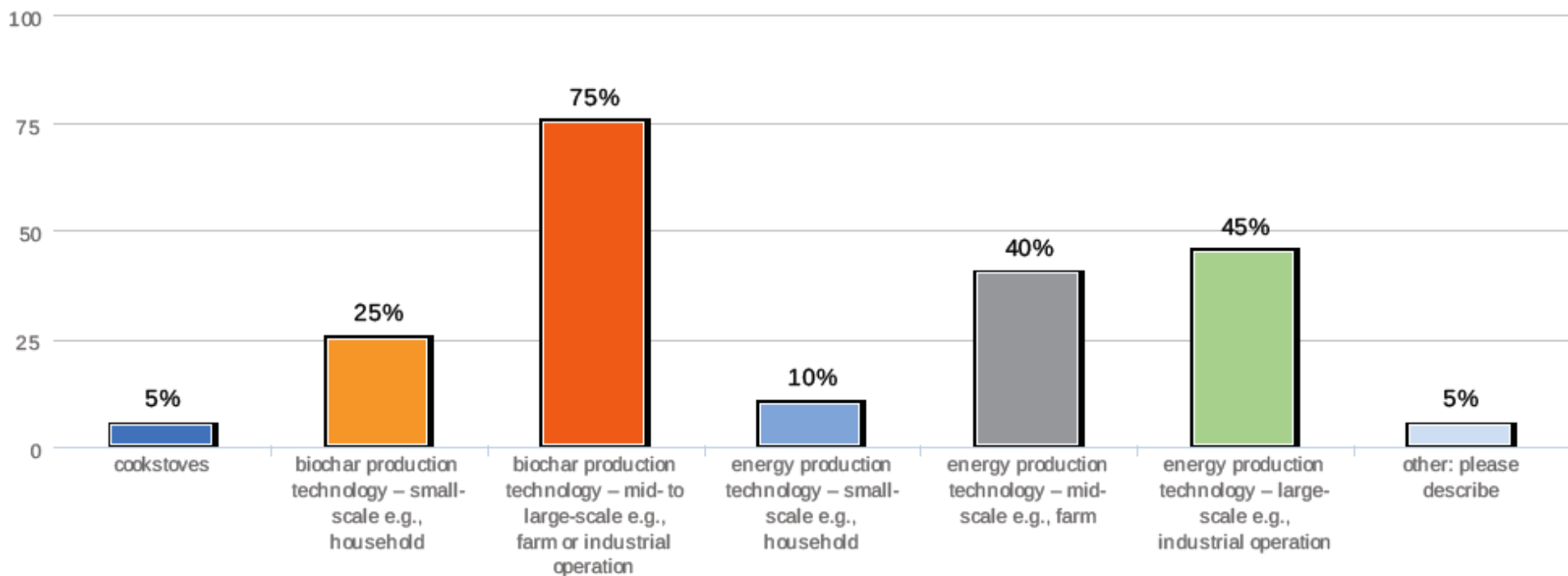
For Biochar Sellers, What is Increase/Decrease in Sales Over the Past 12 Months?



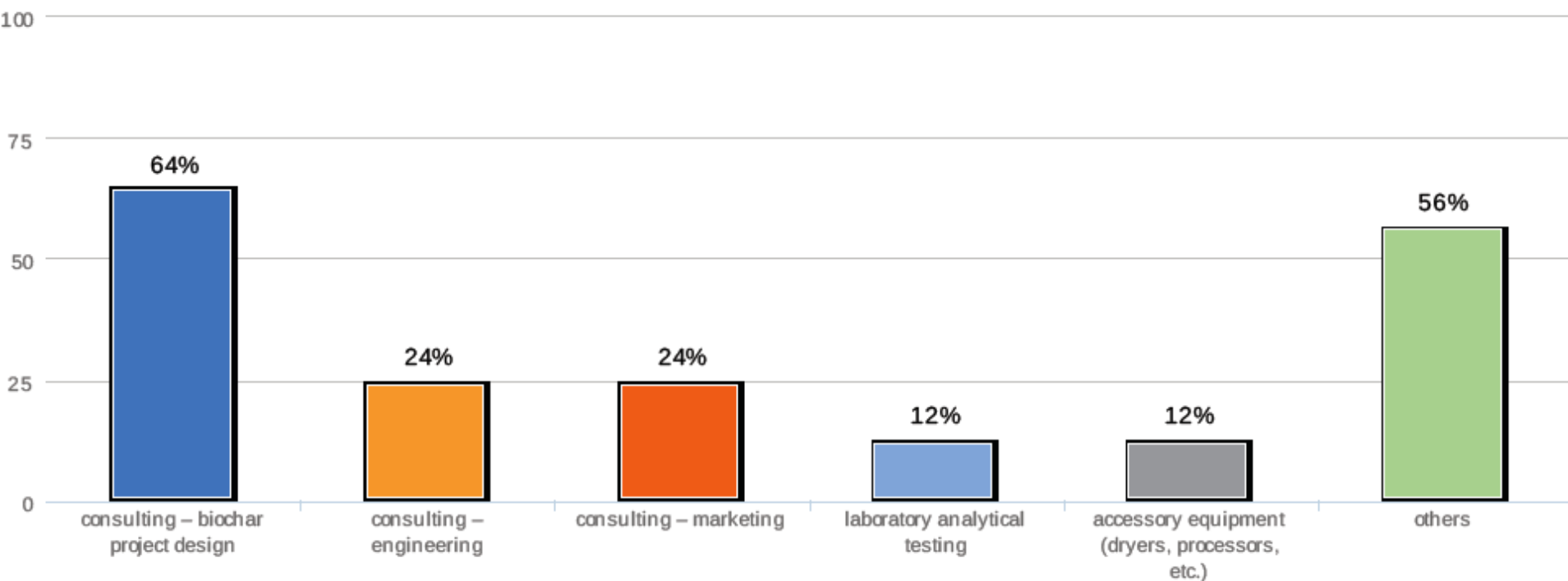
Barriers to Expansion for Biochar Sellers



For Technology Producers, What is the Primary Product?

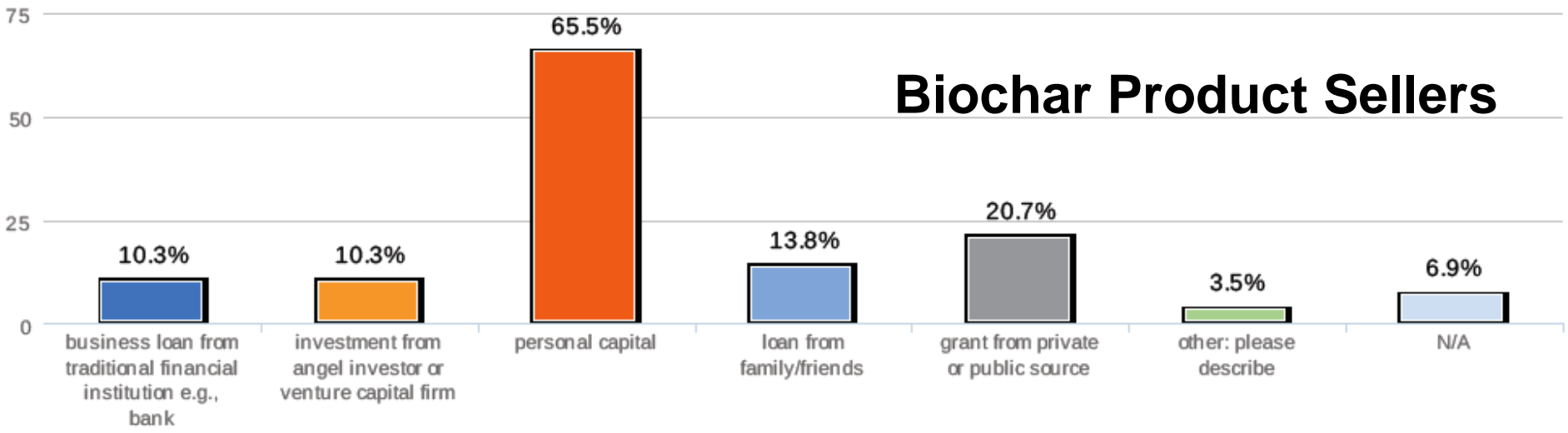


For “Other–Biochar”, What is the Primary Product or Service?



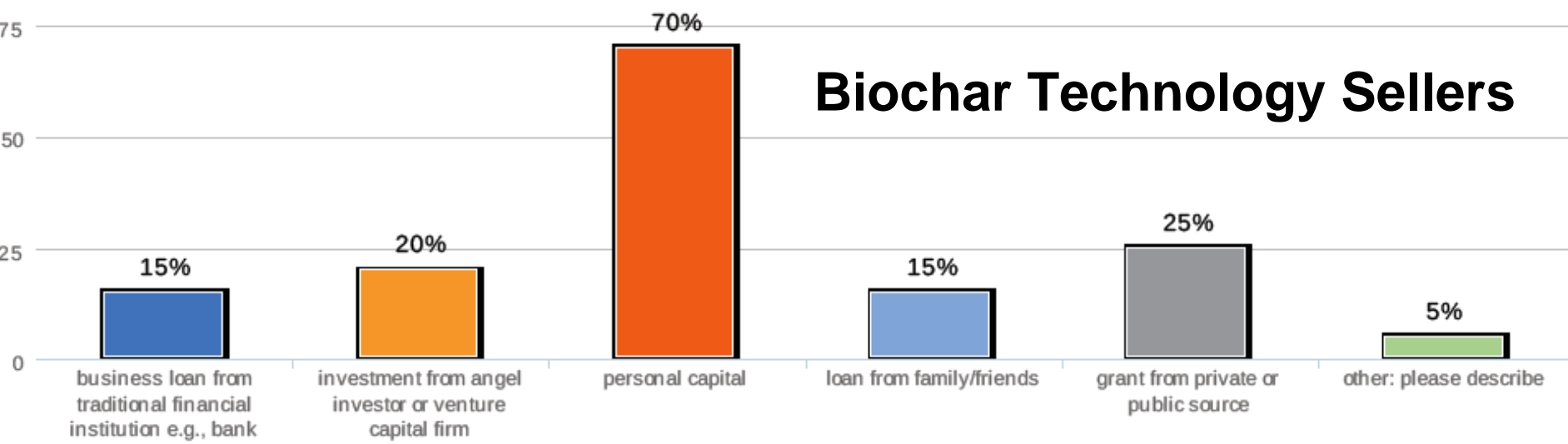
How was the Start Up Financed?

Biochar Product Sellers



Personal capital is currently financing biochar!

Biochar Technology Sellers



Company List

- ▶ Based on a list started in summer 2012
- ▶ IBI staff went through and checked links, etc and had our AC review
- ▶ The current version has just over 140 companies
 - To be included, the company has to have a working website and specific mention of biochar/terra preta as a product or service
- ▶ 25 countries included—looking to expand geographical focus. Of the 140+ companies, 73 are located in the United States; 11 are in Canada



- ▶ Abri Tech Inc
- ▶ AgriTherm
- ▶ Alberta Innovates
- ▶ Alterna BioCarbon
- ▶ Basques Hardwood Charcoal
- ▶ Diacarbon Energy Inc
- ▶ Ensyn Corp.
- ▶ Novotera
- ▶ Out of Ashes Bioenergy Inc
- ▶ Sixth Element Sustainable Management
- ▶ The Prasino Group
- ▶ Agricharge
- ▶ Agri-Tech Producers LLC
- ▶ All Power Labs
- ▶ Amaron Energy
- ▶ Avello Bioenergy
- ▶ Aztec Wonder Inc.
- ▶ B.N.W Industries
- ▶ Bartlett Tree Experts
- ▶ Biochar Central
- ▶ Biochar Global Solutions
- ▶ Biochar Merchants
- ▶ Biochar Now
- ▶ Biochar Products
- ▶ Biochar Solutions
- ▶ Biochar Supreme
- ▶ BioCharWorks
- ▶ Biofine Technology, LLC
- ▶ Biospecific LLC
- ▶ Bison Soil Solutions
- ▶ Blue Sky Biochar
- ▶ BuyActivatedCharcoal.com
- ▶ Carbon Brokers International
- ▶ Carbon Char/ East Coast Compost
- ▶ Carbon Cultures
- ▶ Carolina Clean Energy
- ▶ CharKing International
- ▶ Chip Energy
- ▶ Coaltec Energies
- ▶ Control Labs
- ▶ Cool Planet Energy Systems
- ▶ EcoTrac Organics
- ▶ EcoZoom
- ▶ Encendia Biochar
- ▶ Energy Anew Inc
- ▶ Enginuity Energy LLC
- ▶ Eprida Power and Life Sciences
- ▶ Finger Lakes Biochar
- ▶ Full Circle Biochar
- ▶ Genesis Industries
- ▶ Green Pyro
- ▶ Hawaii Biochar Products
- ▶ HM3 Energy
- ▶ ICM
- ▶ InStove
- ▶ Integro Earth Fuels Inc
- ▶ International Tech Corp
- ▶ Interra Energy, LLC
- ▶ KIS Biochar
- ▶ Micromeritics Analytical Services
- ▶ New Biomass Energy
- ▶ New England Biochar
- ▶ New England Small Farm Institute
- ▶ Phoenix Energy
- ▶ Proton Power
- ▶ Pyrolyzer LLC
- ▶ R & A Energy Solutions
- ▶ Re:char
- ▶ Renewable Oil International
- ▶ South Fork Wood Products
- ▶ Summit Labs
- ▶ Sunmark Environmental
- ▶ T. R. Miles, Technical Consultants, Inc
- ▶ Terralogix Group LLC
- ▶ The Biochar Company LLC
- ▶ Three Dimensional Timberlands
- ▶ Tolero Energy Llc
- ▶ Vee-Go Energy
- ▶ Vermont Biochar
- ▶ Victory Gasworks
- ▶ Waste to Energy Solutions
- ▶ Whitfield Biochar LLC
- ▶ Zero Point Clean Tech

Next Steps

- ▶ Combine all the survey data with the company list data and post on IBI website
- ▶ Produce initial “State of the Industry” report to serve as a baseline
- ▶ Continue updating the spreadsheet—especially internationally—to better capture the scope of biochar projects (both commercial and non-profit/research projects)

Thank you

- ▶ Erich Knight and Lopa Brunjes for the original list of companies that we began working from
- ▶ All those in the community who took the time to submit information on their projects and work in biochar
- ▶ IBI Advisory Committee for reviews and contributions
- ▶ IBI staff and interns who conducted in-depth research on this project

IBI Advisory Committee Members



Gerrie Baker, Canada
Maxim R. Bayan, United States/Russia
Albert S. "Bert" Bennett, United States
Len Bull, United States
Wei-Yin Chen, United States
Annette Cowie, Australia
Andrew Cross, United Kingdom
Kathleen Draper, United States
Mariam Ekebafé, Nigeria
Karl Frogner, US and Mongolia
John Gaunt, United States
Didiek Goenadi, Indonesia
Lorraine K. Green, United States
James Greyson, United Kingdom
Bill Haaf, United States
Wilson Hago, United States
Don Harfield, Canada
Michael Harte, United States
Lloyd Helferty, Canada

Bill Holmberg, United States
Josiah Hunt, United States
Stephen Joseph, Australia
Nancy Kellogg, United States
Puja Khare, India
David Laird, United States
Ronald W. Larson, United States
Chad Lipton, United States
Neil Ian P. Lumanlan, Philippines
Dinesh Mohan, India
Dale Nisbet, United States
Yong Sik Ok, South Korea
Joseph J. Pignatello, United States
Amanda Ravenhill, United States
Ted Redelmeier, Canada
Salim Mayeki Shaban, Kenya
Balwant Singh, Australia
Sharon Valentine, United States
Douglas M. VanThorpe, United States
Lukas Van Zwieten, Australia
Hailong Wang, China
Sheng Mao Yang, China

Tech Field Day

- ▶ Thursday, October 17th Tech Field Day; 9 am - 4 pm
- ▶ New England Small Farm Institute (275 Jackson Street in Belchertown)
- ▶ Biochar producers will have technology demonstrations and workshops during the day. A great opportunity to spend time with hands on biochar technology producers.

Thank you for your time

Please join us at www.biochar-international.org/join

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