



NBI4BIOMASS Project

Western Cape:

Bredasdorp & Sedgefield

Site Visit Report:

21 – 22 April 2026

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Date of Report 3 May 2026

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Summary

- 25 participants from 20 organisations attended the 2-day site visit from 21 - 22 April 2023, travelling 1 100km from Cape Town to Sedgefield return.
- The travelling group was exposed to three businesses: one business, manufacturing pallets and poles, is situated near Napier. The next business, which manufactures biochar and animal feed, is situated near Bredasdorp. The last business, situated near Sedgefield manufactures biochar, animal feed and activated carbon (and soon to be produced gas and electrical energy).
- Participants learnt about the business journeys of the three entrepreneurs, their supply and value chains, how they work with SMME's as partners, their business and investor models, successes and failures, and obstacles to scaling up.
- The following, amongst other elements, was shared: The hard realities of how tough it is to be a successful entrepreneur, the importance of being in it for the long term to see impact, the difficulty of creating financially sustainable businesses, and the need to be extremely resilient.
- Insights, solutions, recommendations, and reflections were harvested during the site visit through interactive activities and small group discussions. Some of this is documented in this report.
- Safe arrival back in Cape Town ended a highly productive collaborative learning journey from the realities of experienced IAP biomass entrepreneurs.

Site visit theme and key questions

A theme was chosen to encapsulate what the site visit was about, and 4 key questions developed for the participants to answer by the end of the site visit. These key questions focused and provided boundaries for what the site visit saw and discussed.

Site Visit theme:

Lessons and challenges from the development journey of experienced IAP biomass entrepreneurs

Key questions for resolution through the site visit:

1. What core components make up the entrepreneur supply/value chains?
2. What successes & failures we can learn from, & why?
3. What business and finance challenges are inhibiting entrepreneurial growth & scaling up & why?
4. What opportunities are there for early-stage entrepreneurs?



Maximising the collaborative learning amongst site visit & workshop participants

- A process was followed that enabled a collaborative learning journey between participants while fostering the development of trust and relationships between them. These 3 ingredients are critical for developing a community of practice as the NBI4BIOMASS project wants to do.
- This was be done in a way that maximised the collaborative learning opportunities between participants through a variety of interactive activities, small groups working on specific tasks, and participatory plenary feedback. This ensured the participants actively participated and developed answers to each of the workshop key questions.
- A safe space was created where were participants were able to freely express their views, discuss and debate between themselves. Importantly, facilitators in the small group discussions encouraged the quiet voices were into the discussions, where its was felt that everybody had the freedom to express themselves and tap into their collective intellectual creativity.
- This enabled participants to develop a variety of different ideas and solutions needed to answer the key questions of the workshop.
- This type of collaborative learning was aimed at beginning to lay the foundation for cultivating a community of practice in the future, where participants could continue to learn and practice together in the future.

Key question methodology:

- Key questions were used as a methodology to focus the discussions of the site visit enabling participants to answer the questions and reach tangible outputs by the end.
- These questions were developed according to what the NBI4BIOMASS project needed to achieve by the end of the site visit and workshop.

Site Visit Agenda

Day 1: Tuesday 21 April 2026

Morning: Travel Cape Town to Bredasdorp & to Regenerative SPACE & Nuwejaars Wetlands SMA
Demonstration of animal feed and biochar production & reflecting on business and finance challenges and developing possible solutions

Afternoon: Travel to Sedgefield

Time	Activity
06.30 07.00	* Participants arrive at StayEasy Century City, where cars can be parked while on site visit.
07.00 10.30	* Travel Cape Town to Bredasdorp and onto Nuwejaars Wetland SMA site * Discussion on buses - o Dialogue interview: Who am I? - o Site visit overview and what is expected of you? - o Read one page info sheets from the 3 entrepreneurs - o What do I want answered by the site visits? Share with the rest of the bus
10.30 11.10	Animal feed pellets and biochar processing plant * Demonstration and discussion on converting AIP biomass to animal feed pellets and biochar

11.10 11.50	Business and finance challenges inhibiting entrepreneurial growth & scaling up * Presentation and discussion * Regenerative SPACE * Nuwejaars Wetlands SMA * After the site visit NBI will take up these challenges with its members, project partners and participants
11.50 12.05	Reflective Space * Participants reflect individually and prepare to share experiences and explore possible solutions to the business and financial challenges presented
12.05 12.45	Mutual knowledge sharing and learning * A facilitated discussion session where participants share ideas and possible solutions to the challenges shared by Regenerative SPACE and the Nuwejaars Wetlands SMA
12.45 13.00	Board buses and depart for Sedgefield with LUNCH on the bus
13.00 – 18.00	* Travel to Sedgefield * Reflection session in Bus ○ What were the two things that made the greatest impression on me? ○ Hotel check-in

Day 2: Wednesday 22 April 2026

Morning: New Carbon development journey: Seeing, learning, sharing knowledge and experiences on bio-oil, wood vinegar, activated carbon, gas and electrical energy production from AIP biomass.

Afternoon: Travel Sedgefield to Cape Town

Time	Activity
07.50 08.30	* Travel to New Carbon
08.30 08.45	* Overview of New Carbon Products: bio-oil, wood vinegar, activated carbon, gas and electrical energy. ○ Introduction to New Carbon and watching overview video
08.45 09.45	* Kontiki kiln demonstration & Bio-refinery No photos of processing and bio refinery ○ Kontiki - example of a low tech way of making biochar ○ See production, processing and packaging of biochar ○ Biochar at scale, made in Oudtshoorn and processed in George ○ Visit bio refinery - the main business anchor

09.45 10.45	* An overview of the New Carbon development journey story, lessons and challenges inhibiting scaling up
10.45 11.00	Coffee/tea break
11.00 12.00	* Small group discussions * Break up into 2 groups and brainstorm answers to the 4 site visit questions based on what you have seen, heard and discovered at New Carbon
12.00	Depart Sedgefield and LUNCH on the bus
12.00 – 18.00 (6 hours)	* Travel to Cape Town * Reflection session in bus - o What were the two things that made the greatest impression on me that I want to share
18.00	* Arrive back in Cape Town at StayEasy, Century City

DAY 1 entrepreneurs:

Nuwejaars Wetlands SMA
(Special Management Area)

& Regenerative SPACE



The long and winding 1 100km road: Cape Town – Bredasdorp - Sedgefield – Cape town

Interactive activities while on the road

While travelling the 550km to Sedgefield, interactive activities were done on the two buses:

- **Dialogue interviews** were held between 2 people to get to know each other better, contributing to. creating a safe space, practicing talking and listening
- Participants were asked to write down and then share their **expectations** of the site visit; this to stimulate deeper thinking about what they wanted to get out of the trip.
- Participants had the time to read **one page information sheets** describing the operations of the 3 entrepreneurs to be visited enroute.
- An **overview of the 2-day site** visit, was provided.
- To mentally prepare participants for the trip, it was highlighted that the site visit was not a “show and tell” and that **active participation in collaborative learning-based discussions** was critical for site visit success.



Expectations from participants from site visit - Malaka Bus

EXPECTATIONS

MALAKA BUS

Bongi - Exp
Refining or finding
a related business
model that works
for rural producers
that I can share
with industry colleagues

Bongi

INPUT

Share my industry
knowledge ^{expertise} from
experience

INPUT - Bongi

Share research
and findings on
nettle species that
can help win the
struggle

- Meet like minded people
 - Ground truth our project plans
 - Learn from other people's experience
- Gill

To get other pieces
of the puzzle regarding
Scaling biomass
value chains.
To get questions that
will help us innovate

Henry

(Vanessa)

Biomass strategy
→ Interaction with
stakeholders

→ To explore opportunities
for expanding biomass
initiatives, including
funding mechanisms

→ Expectations (Vanessa)
To learn, gain first hand
insight into how biomass
projects are implemented

Bongi EXPECTATIONS
I would like
to learn about
business kull
point
(one failure that
causes shutdown)

Bongi EXPECTATIONS

LABOUR

LAY-OUT

Bongi - Exp
REDUCING
TRANSPORT AND
CLEARING COST
(As they take 60-80%
of costs)

Bongi - Expectations
Unit Economics

Expectations from participants from site visit - Garth Bus

EXPECTATIONS:

Sarah
Expectations

- learning about new innovations and ways of using biomass
- learn from other participants about their work

Sarah

- learn more about learning, and what supports learning.

Garth

- everyone has fun while learning & enjoy the space
- all learn how to collaborate & share resources to unlock solutions

Garth

- how to pull all of this for those beyond this unit to use [acting] in unlocking sticking points
- * how collaborate to unlock within the ecosystem

LIN COLAJ

4-LEARN

② NETWORK

③ SEE BIGGER PICTURE

ACTION(s)

{or at least ideas for action}
ON
LEVERAGING PRIVATE
SECTOR IN UPGRADING
AND FINANCING
BANKABLE/MARKETABLE
MODELS/SOLUTIONS

Nik

Esther - Advisor

- Learn more about the regenerative space, animal feed and more bi-products from biomass
- Share my knowledge and learn from the experts (team).

Sk

EXPECTATIONS

- ① LEARNING FROM REAL LIFE PRACTICE
- ② UNDERSTANDING THE BIOGAS VALUE CHAIN
- ③ BUSINESS & FINANCIAL OPPORTUNITIES
- ④ OTHER OPPORTUNITIES & GROWTH

Converting AIP biomass to biochar

- A demonstration and discussion was held on how AIP biomass was converted to biochar & wood vinegar using a simple retort to produce it.
- Input and output efficiency & cost figures were shared.
- Challenges and solutions to scaling up were discussed.

Insights included:

- While biochar production is feasible, “it is easier to make biochar and harder to sell”, pointing to a core challenge in market access rather than production
- Transport constraints significantly affect viability, with high costs associated with moving biomass and products to markets
- Markets require scale and consistent supply, which small producers struggle to meet
- There is a need to identify end-users closer to production sites to reduce logistics costs
- Higher-value products (e.g. “engineered biochar”) are being explored to offset cost pressures and access higher-value markets



Converting AIP biomass & biochar to animal feed pellets



- In another example, AIP biomass was converted to animal feed pellets with the addition of the biochar
- Failures, adaptation's, successes, lesson learnt, efficiency & cost figures were shared.

Insights included:

- There are emerging niche opportunities, including identified gaps such as poultry feed markets
- Entrepreneurs need to focus not only on production but also on market development and customer confidence-building
- Biochar can be integrated into feed, but markets are reluctant to adopt new practices, particularly from less established suppliers

Entrepreneurs sharing their journey: Challenges, lessons & solutions

Nuwejaars Wetlands SMA (Ross Kettles) & Regenerative SPACE (Carla Ackerman) shared their development journey & business/finance challenges inhibiting entrepreneurial growth & scaling up

A facilitated discussion session was held where participants gave back, sharing ideas and possible solutions to the challenges shared by the entrepreneurs



Challenges that emerged from the discussion

Nuwe SAARS Wetland SAA

CHALLENGES

- ① AIP clearing costs - more PAMP
w/ more funding = Greater Demand & \$
- ② Need on's users - close by
- Animal Ecot.
- woodchips
- ecotops
- biochar
- ③ How to be self sustainable?
- Biochar
- offset clearing + follow up
- ④ Fire = ↑ seedling growth = ↑ Problem
- ⑤ Plenty of Business from Fires
- ⑥ Land owners - Different ASPIRATION
for using/controlling AIP's
- ⑦ COSTS of BIODIVERSITY MACHINES
- ⑧ ASSURANCE of Funding

Regenerative SPACE

CHALLENGES

- ① Solution must exceed the size of Problem
o SCALE UP!
- ② How can businesses become sustainable
when focusing on whole value chain
& not only on what their niche is?
- ③ Problem of cherry picking &
focusing on AIP species that are
economically viable & not other
species not viable
- ④ Pallets - lots of waste for choice
plants o challenge of scale
- ⑤ Finance } challenges
markets }
logistics }
- ⑥ How do we do it? & consequence
manage

Solutions that emerged from the discussion

Solutions

Interconnected

- ① Rangi - Linking businesses ^{along value chain}
- why everybody doing same thing?
 - some business should do diff
 - Part of value chain as an ecosystem is a business model creating value ecosystem.

② Chris

- Free Bsk & A/P clearing
- Focus on accessible areas
- Financially
- optimise clearing & harvesting

③ Jill

- wood volume & value & surplus
- Extension kiln & efficient use in the landscape - Green 20
- more efficient & cheaper than Ross using.

- ④ Rudolf - maps for carbon credits
- Appoint somebody carbon credits not
 - get pilot project

- ⑤ Chris ^{umbrella for some some's to fall under} collectives - co-operative to work together!

- ⑥ Vanessa - create a biomass COP - WC + NATURAL AS not enough sharing of info + who is out there.

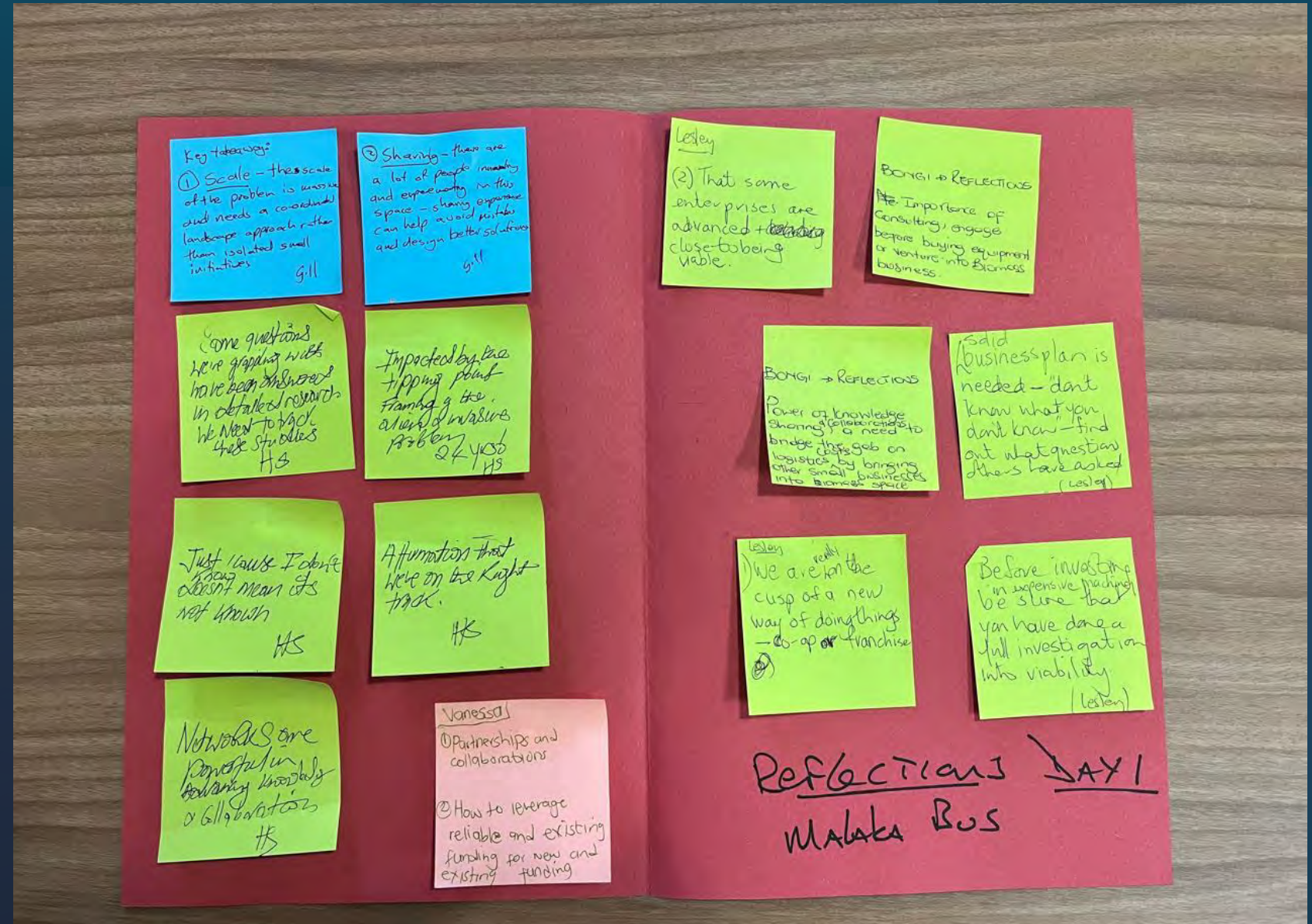
Donalds NWA
Site Visit
Notes

Insights & Recommendations from Day 1 discussions

- Garth, Malaka and Sarah to top 3-4 solutions & top 3-4 insights from your notes
- Insights
 - Transport distance (radius of viability) is a critical determinant of feasibility
 - Biomass supply is fragmented and insufficiently aggregated, limiting economies of scale
 - The biomass beneficiation economy is a volume-based system requiring scale to be viable
 - Entrepreneurs must address feedstock, operations costs, equipment, and off-take simultaneously
 - Transport distance (radius of viability) is a critical determinant of feasibility
 - Transitioning away from grant-dependent models toward revenue-generating models is critical
- Key emerging solutions
 - Develop local end-user markets to reduce transport costs
 - Use aggregation, stockpiling and coordinated logistics to build volumes.
 - Enter formal agreements with partners and buyers to reduce risk
 - Explore high value markets to improve profit margins
 - Scaling requires optimisation of logistics systems, including routing, stockpiling, and reverse logistic
 - There is a need for co-ordinated approaches (e.g. co-operatives or aggregation platforms) to manage finance, markets, and logistics
 - Industrial ecosystem approaches, where different actors specialise along the value chain, are more viable than isolated enterprises

Reflections from participants at the end of day 1 - Malaka Bus

In the bus on to Sedgefield, participants were asked to reflect on day 1 and write down what key learning they wanted to take back into their work, and share it with the others on the bus



Reflections from participants at the end of day 1 - Garth Bus

REFLECTIONS: ①

Esther

- High high
- ① Presence of biochar and woodvirgin
- ② Animal feed
- ③ Uniform challenge across SMMS - ^{inoculated} _{inoculated}

Esther - Solution

- Leverage the restoration work to unlock more multiple value-chain
- Multiple by product

LINGOLD

Brochures will remain incomplete without the right information

We need to invite other industries to these meetings to hear their solutions. Eg Engineers.

CINCINNATI
WATER CALCULATOR
Solution

Create Electricity out
of turning A.P.
It will generate enough
funds.

Biomass production
Conference

Growth Actions

1) Unlock & demystify carbon credits and opportunities

Graph.

2) Should we get behind one saleable commodity
eg: brochar
like Nambur with charcoal

TAKE AWAY DAY 1

Different Models w/ pros & cons

No one knows who is buying and where to find them

→ either there's no need for chocolate (large scale)

→ or no awareness, yet

Nik

SK

- 1) **INTERACTION & COLLABORATION**
 - ESTABLISHMENT OF COP AS A PLATFORM
- 2) **PRODUCTION &**
 - FIRST THIRD WARD
- 3) **BIOMASS ECONOMY GROWTH**

④ Biomass available

- enough biomass to sustain the sector
- only using a fraction of available biomass
- not all species used - with more diversification

⑤ VALUE CONTAIN
- NOT YET FULLY
EXPLORED

⑤ END-USER & MARKETING OF BIOGAS PRODUCT

⑦ WHAT IS IT

IS IT FOR IAP
IS TT FOR BUSINES
IS IT FOR SMILES

Sarah (take away)

- * so many separate pockets that people are working in
- * competition vs collaboration
- * is there space for both
- * how this plays out in the broader ecosystem
- * non-woody biomass?

sarah (take away)

- * struck by how ^{clearing} adoption of technology can be a mixed blessing
- early adopter - some market entry
- technology improves making more productive have to then reinvest

DAY 2
entrepreneur:

NewCarbon



Short overview of NewCarbon

A video and presentation by NewCarbon CEO Marius van der Merwe highlighted the journey NewCarbon had undertaken to get to where it is presently.

- This provided context to the site visit to the processing plant and biorefinery.
- Current products include biochar, activated carbon for animal feed, and wood vinegar.
- When the commercial biorefinery is completed gas and electrical energy will be produced as well as other products currently under development.





During the initial presentation and the site visit walkabout, Marius shared more about NewCarbon's (NC) challenging journey, including:

- Components of their supply/value chain
- How NC works with its partners
- NC supporting development of SMMEs as partners
- Biochar trials for agriculture crops
- Commercial version of bio refinery & market development
- Business & investor model NC uses
- Failures, successes & realities
- Key lessons for emerging entrepreneurs
- The data and logistics challenges NC have
- What's inhibiting NC from scaling up



Kontiki Kiln demonstration & commercial biorefinery tour

- A simple way of making biochar and wood vinegar in a Kontiki kiln was demonstrated, although NewCarbon use larger and more efficient methods to make their biochar off site.
- Participants were shown around the commercial biorefinery (80% complete) which will be the key anchor of the business, demonstrating how a variety of products including gas and electrical energy could be produced from it. Photos were not taken as requested by NC to protect IP.





Participants learnt about the processing and packaging of biochar into different products

Biochar was crushed into different size grains suitable for a variety of products





Small Group Discussions:

- Participants split up into two groups, with each having a facilitator/scribe
- Task: For day 2, answer the 4 site visit key questions based on what they have seen, learnt, and heard:
 1. What core components make up the entrepreneur **supply/value chains**?
 2. What **successes & failures** we can learn from, & why?
 3. What **business and finance challenges** are inhibiting entrepreneurial growth & scaling up & why?
 4. What **opportunities** are there for early-stage entrepreneurs?



MALAKAS NC site notes

(1)

Core Components:

Sourcing feedstock

Processing

Sales/Marketing

Logistics
in
between.

Funding Model

- Capital availability
- Clear on who the funder/potential funders... are.
- Diversifying the feedstock, not solely relying on ATP.

R&D

- Output from the R&D, almost making him sure what the end product is.
- Knowledge/Data on feedstock.
- Future outlook

Focused

- Avoiding Scope/Mission Creeps.



Persistence & Resilience.

Failures/Risks

- Investment into the plant. (Risk)
by single investor.
- Scope change (Gasifier added due to loadshedding)
(Risk)

Successes →

- * Colab with smaller Interpren. (supplying feedstock input).
- * Proven prototype (Enabling upscaling & further investment).
- * Gov relationship - helping unlock red tapes.
- * Paying for biomass.
- * Pre-Commercialisation.
- * Identifying & being sure of his strength.

Inhibitors

- * Capital Cost. (R130M/POD).
- * → N.B the cost may go down once the concept is operational.
- * Minimum ^{Gov.} Support.
- * Transportation of biomass(?)

Opportunity for Early Stage Ent.

- Transport; Supplying Feedstock.
- Sourcing input products for Beneficiation.
- R & D
- Innovation - Ents. that are venturing into Value added industries
- Agg. supply chains
- Employment.
- Working model for landowners to clear
- Training & development.



GARTH NC SITE NOTES

① Buy in brochar

- diversification of value chain's / feed stocks
- Opportunities for SMEs - eg low cost of (Kontiki) (eg 25-35k)
- focus of value chain
- know of PM engineering
- optimization of product line
- role of entrep networks & shared learning
- Stds that govern procurement
- incentivisation of landowners vs compliance
- Co-operative model

anchor client eg MLI
+ skills training centre of the innovation
virtuous cycle
model to build model in ecosystem

② cost & lessons

- role of co-financing
- skills of pvt sector
- JVs/stockvle
- pvt sector partnerships like transport
- ↳ in kind contribution
- Farmers have resources for clearing + gre buyers of product
- ↳ also provide waste
- power of relationships - trust bldg - CoP
- non conventional funders - eg insurers
- ↳ ie protocols

don't have knowledge " " vision
commonality aka waste model
change or lang bdr
- a sense of belonging

③ all here @ NC done without gov

- ↳ how do we support NC to leverage investment/assets
- plant is success
- AP can drive elect - Namibian example

Insights & Recommendations from Day 2 discussions



- Key insights
 - Biomass availability is sufficient, but supply chains are not organised to deliver reliable, aggregated volumes
 - The business model emphasises beneficiating biochar into higher-value products rather than selling raw material, this way the entrepreneur could increase margins and offset other costs
 - Carbon credits are considered “the cherry on top” and not a primary revenue stream
- Recommendations
 - Scaling requires significant capital investment and progression through multiple financing stages (FFF)
 - Formalise partnerships and offtake agreements to reduce commercial risk
 - Viability depends on securing an anchor client and reliable feedstock supply before scaling complexity

Farewells were said to the New Carbon team and thank you gifts presented



① Aggregation Model
Impressed by the model
of purchasing biochar
from farmers for
central processing &
selling to market at
scale.
gill

② Prioritization of
Wood Vinegar in
their industrial unit -
emphasize the value
of wood vinegar
ignored in other models.
gill

③ Aggregation
model -
replicable.
(Lesley)

① Resistance and Persistence
② Availability of
biomass

Lesley

① The importance
of "Friends, Family
& Fools" in funding
start-ups.

BONGI

Diversify to more
manageable process
and believe in your
pre-commercializing
process but progress
Be stand out

There's always a
change in comments
related work to drive
scale without all
supportive elements
especially the skill
level & sophistication of
the technology

Whispering they
TSD/ & Technology
account for
how it will be
maintained.

② Ensuring have
a secure source
of biomass, in this
case the waste
from asanitis.
(Lesley)

BONGI

Resilience is the key
Importance of protecting
and stand firm on
the ~~map~~ output who
you think is a winner
for you.
Stay focus & not be
shaken by others progress

(Lesley)

④ Avoid
mission
"creep"
in products

BONGI

As my previous plan to adapt
I'll venture into
Biochar production
instead of Activated
Carbon which requires
separate processes

Vorreiser

→ Single source of
investment could be
a risk in long run.
→ Clear vision of your
goal and target
market is very crucial

REFLECTIONS DAY 2
Malaka Bus

Day 2 Reflections Malaka Bus

In the bus on the way back
to Cape Town, participants
were asked to reflect on day
2 and write down what key
learning they wanted to take
back into their work, and
share it with the others on
the bus

Day 2 Reflections

Garth Bus

Feeling close to
and personal
at someone is
- not help
being in a way
that the pic
some and
- amazingly
and -

Expenditures for
- Domestic / Foreign
by President of Penn
- Expenditures for
- Expenditures for
- Expenditures for
- Expenditures for

* Biomass Technology
Automation
VS
TRADITIONAL
ways of
Production
- efficient &
Effectiveness in
Production

MARINE TECHNOLOGY

- * UP-SCALING PRODUCTION
- * VARIOUS PRODUCTS
 - GAS
 - ELECTRICITY (ECHO)
 - BIO-ETHANOL - ALCOHOL
 - BIO-OIL CATERON
 - BIO-FUEL
 - WOOD BRIDGE

1. Yet another Different
IDEA / "MODEL"

- Combining Pros of previous 2
- Power of vision & focus
- Importance of handling metrics

ACTION

Virtuous Cycle/Prod. shared
17-word & out-word shared

- ° focus on the high value commodities (high end activities)
- ↳ link to go @ coordinating on one particular value chain
- * link for connectivity of market

SED & training
putting weight behind
marinus - supporting
him to grow

- sector development
- market led banking
(eg FSC)

- Regulation / Policy framework
- Macroeconomic PROTECT & STRENGTHEN
- Boosts Economy
- SAVING potential
- MITIGATE RISK

Social Media Campaign
to stimulate consumers
A Need for a training
Module creation on
various filio products

- This can work!
 - Key will be collaboration into a knowledge sharing "enough" for all in the supply & value chains (we will do differently)
 - get X's are to invest in insight things cleverly, and "get out of the way" (as needed)

- we haven't even scratched the surface of the possibilities and opportunities
- So many potential products and models
- ⇒ there can cross subsidize when creating & rehab

What other products will Morris and other provide?

cones! Plant is
the only plant
known to run a
20-30 year life span

**Arrival back in Cape Town ended a highly productive
collaborative learning journey
from the realities of experienced IAP biomass entrepreneurs**



Attendance register
