

SKILLS BUILDER TRAINING WORKSHOP



Enrol now

Get Started Skills Builder Training

Are you interested in turning slash into a usable product?
Are you interested in turning slash into biochar for your garden?
Are you interested in turning slash into charcoal briquettes for your BBQ and heating in your home?
If so sign up to this series of workshops with Thabiso and Matene.

Limited spaces available so enrol now at the Tolaga Bay Innovation Hub, 12 Cook Street, Tolaga Bay.

Dates: 22, 25, 29 May and 1 June 2023
Time: 9am start
Cost: FREE*
Facilitators: Thabiso Blak Mashaba and Matene Maraki

For more information, contact:
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bfrenchhall@eit.ac.nz

*Conditions apply.

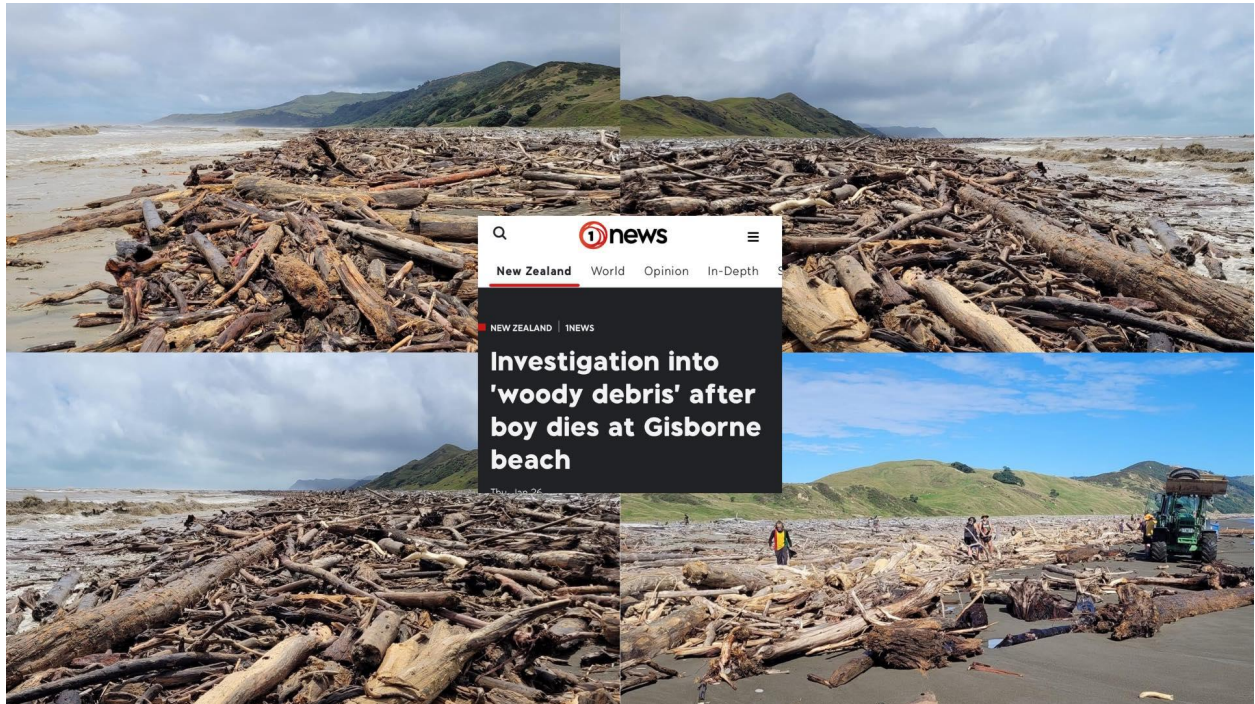


MONITORING, EVALUATION, RESEARCH AND LEARNING (MERL) REPORT

Compiled by Thabiso Mashaba and Matene Maraki
As at 2nd June 2023

THE CHALLENGE

Slash waste situation in the Tairāwhiti region.



BACKGROUND OF PROJECT

“*The Slash for Cash project* ” is an initiative of the Tolaga Bay Inn Charitable Trust (TBICT) which is supported and driven by TBICT members Tolaga Bay Innovation and These Hands GSSE.

After spending time understanding the slash situation and engaging with various Community Members, Research, Projects, Campaigns and Organizations in Tolaga Bay and the Tairāwhiti Region.

Edmund Hillary Fellowship (EHF) International Fellow from Botswana who is also the co-founder, CEO and Lead Instructor of These Hands GSSE, Thabiso Mashaba, decided to introduce the idea that the community could clean up their environment by turning the slash into various useful products or services to generate revenue for themselves.

This resonated with most as an alternative incentive to clean up their lands and a recovery plan. As an EHF Fellow he then chose to pursue this further working with the Tangata Whenua to develop it as a possible community empowerment and intervention.

He then further went on to pitch the idea at Tech_Stars Startup Weekend Tairāwhiti which was hosted at Campion College in Gisborne from the 21st to 23rd April 2023. The idea was able to attract 2 people from Wairoa (Hine Ao Apatari and Paul Tekahu), 1 person from Ruatoria (Pane Kawhia), 1 person from Tikitiki (Kyrā Dewes) and 1 person from Gisborne (Matene Maraki) and they were able to form a team to work on the idea as a startup idea that weekend.

At the end of that weekend, they pitched the idea against 6 other ideas and were able to scoop 2nd prize. This proved as initial validation of the idea.

It was while working on the startup idea as a team members, they engaged with several community members and landowners in the region who showed an interest in the products that they decided to launch the project as means to encourage community members to clean up their environment whilst generating an income for themselves; and consequently heal the eroded lands as forestry industry and landowners apply the activated Biochar to the land. They decided to start with two products which also have potential to be service streams.

The first product was activated biochar which could be sold to land owners and the forestry industry in order to apply it to the lands to heal the eroded land caused by clear felling. The same activated biochar would also be sold to community members to use in their gardens that may lack nutrients due to them being washed away by recent floods.

The second product was smokeless charcoal briquettes which would be made from the excess biochar and would then be sold to community members to use as an alternative clean fuel for cooking, their bbqs and for heating up their homes.

OUR SOLUTION



SOME FACTS ABOUT THE SLASH SITUATION IN TAIRAWHITI REGION

1. We know that clear felling leads to slash and soil erosion in the forestry fields.
2. We know that some of the forestry fields are owned by forestry companies and some are owned by landowners.
3. We know that about 400 cubic meters of slash was washed down to beaches and pads in one night of cyclone gabrielle.
4. We know that cyclone gabrielle floods carrying slash destroyed properties of various community members and public infrastructure.
5. We know that the forestry industry pays an average of 200 000 NZD in fines for undisposed slash in their fields.
6. We know that the government spends close to 35 million NZD on infrastructure repairs and cleaning up the slash.
7. We know that the 400 cubic meters of slash amounts to about 17 million NZD in potential carbon credits.

SOME FACTS ABOUT OUR PROPOSED SOLUTION

1. Uses a safe and environmental friendly process of carbonization to turn the slash into pure charcoal (biochar).
2. Any matter that has carbon can be converted into biochar through the process of carbonization. The process of carbonization entails burning dead and dry carbon matter in a kiln and it extracts oxygen and moisture from the burn whilst leaving carbon dioxide and carbon inside the kiln which then forms the biochar as it cools down inside the enclosed kiln.
3. Carbonization can be done at a low scale using a small metal bucket kiln.
4. The smokeless briquettes can be made at a low scale using a simple briquette press.
5. Depending on the quantity and type of the dead carbon matter that is being carbonized, it can take up to 30 minutes or more to get 1 kg of biochar product using a small metal bucket kiln.
6. It will take at least 40 people to produce a minimum of 4000 kg of biochar per week using small metal bucket kilns.
7. We can produce 3000 kg of activated biochar and 1000 kg of smokeless briquettes in one week.
8. The biochar can be crushed to small non-solubles and mixed with organic compost; or animal pee; or slurry and/or even human pee to make activated biochar which can be used as an organic fertilizer on the lands and gardens after 2-3 days of activating.
9. The biochar can also be crushed to powder form, mixed with any type of organic starch to serve as a binder and then pressed in a briquette press to make smokeless briquettes which can be used as a clean fuel for cooking after 2-5 days of drying.
10. The small metal bucket kiln and simple briquette press can be made using cheap or recycled and repurposed locally available material and tools.

FACTS ABOUT OUR PROJECT CONTINUITY PLANS

Phase 1: 6 months pilot in Tolaga Bay, Tikitiki, Ruatoria and Wairoa

1. Retool and Upskill unemployed or enterprising community members with various creativity and innovation skills; the co-creative design process approach; basic metalworking ; and basic woodworking.
2. Profile and Build a network of unemployed or enterprising community members that can be future employees of the project in various roles.
3. Train and connect a total of 30 unemployed or enterprising community members from Tolaga Bay, Tikitiki and Ruatoria.
4. Train and connect a total of 44 unemployed or enterprising community members from Wairoa.
5. Empower these community members to make themselves small metal bucket kilns.
6. Empower these community members to make themselves simple briquette presses.
7. Empower these community members to make themselves simple biochar crushers and how to crush the biochar for the two products.
8. Empower these community members to make their own crushed biochar mixers and how to mix the two forms of crushed biochar to make activated biochar and smokeless briquettes.
9. Empower these community members to store and package their activated biochar and smokeless briquettes.
10. Empower these community members to apply their activated biochar to their gardens and an allocated 1 hectare or half a hectare piece of land.
11. Do proof of concept, conduct product tests and further validation of the two products.
12. Build relationships with other Tairāwhiti communities, district councils, the forestry industry, landowners, and other key stakeholders that can support our cause.

Phase 2: Registration, Fundraise, Low Scale Production and Low Sales

1. Register Slash for Cash as a for-profit social enterprise or community cooperative.
2. Fundraise grants to buy machinery and equipment.
3. Produce activated biochar and smokeless briquettes on site and at a low scale
4. Sell activated biochar to few forestry companies or landowners that will engage us to do clean ups on their sites.
5. Sell smokeless briquettes to community members in the piloted communities.

Phase 3: Fundraise; Medium Scale Production and Medium Scale Sales

1. Fundraise grants to buy extra machinery and equipment.
2. Produce activated biochar and smokeless briquettes on site and at a medium scale.
3. Sell activated biochar to more forestry companies or landowners that will engage us to do clean ups on their sites.
4. Sell smokeless briquettes to community members in the piloted communities and several other Tairawhiti communities.

Phase 4: Fundraise; High Scale Production and High Scale Sales

1. Fundraise grants to buy a big truck and set up a production plant.
2. Produce activated biochar and smokeless briquettes on site; at our production plant and at a high scale.
3. Sell activated biochar to more forestry companies or landowners that will engage us to do clean ups on their sites and that buy from our production plant.
4. Sell smokeless briquettes to community members in retail outlets in Tairawhiti and from our production plant to all Tairawhiti communities.

Phase 5: Fundraise; Higher Scale Production and Higher Scale Sales

1. Fundraise patient capital to buy an extra big truck and increase production plant capacity.
2. Produce activated biochar and smokeless briquettes on site; at our production plant and at a higher scale.
3. Sell activated biochar to more forestry companies or landowners that will engage us to do clean ups on their sites and that buy from our production plant.
4. Sell smokeless briquettes to community members in retail outlets across New Zealand and from our production plant to all parts of New Zealand.

MONITORING REPORT

Phase 1: Skills Builder Training Workshop

1. **Dates:** 22nd May; 25th May; 29th May and 1st June 2023.
2. **Location:** Tolaga Bay
3. **Venue:** Tolaga Bay Innovation Hub (Community Workshop)
4. **Targeted Number of Participants:** 30
5. **Recruited Number of Participants:** 22
6. **Actual Number of Participants:** 14
7. **Funded by:** Adult and Community Education (ACE) Programme - Eastern Institute of Technology (EIT) Hawkes Bay and Tairāwhiti with Marketing, Participant Recruitment, Tools, Materials and Catering.
8. **Supported by:** These Hands GSSE with Curriculum ; Tolaga Bay Innovation with Participant Recruitment and Venue ,
9. **Other supporters:** Taiki E! with mentorship; Hauiti Marae with Powhiri ; Huiturangiroa with Traditional Facilitation and Participant Recruitment; and Uawa Factory Road Native Nursery with Slurry for making activated biochar.
10. **Implemented by:** Slash for Cash Project
11. **Lead Instructor:** Thabiso Mashaba
12. **Design Facilitator:** Matene Maraki

Objectives of the Training:

1. Retool and Upskill unemployed or enterprising community members with various creativity and innovation skills; the co-creative design process approach; basic metalworking ; and basic woodworking.
2. Train and connect unemployed or enterprising community members from Tolaga Bay, Tikitiki and Ruatoria.
3. Empower these community members to make themselves small metal bucket kilns.
4. Empower these community members to make themselves simple briquette presses.
5. Empower these community members to make themselves simple biochar crushers and how to crush the biochar for the two products.
6. Empower these community members to make their own crushed biochar mixers and how to mix the two forms of crushed biochar to make activated biochar and smokeless briquettes.
7. Empower these community members to store and package their activated biochar and smokeless briquettes.
8. Empower these community members to apply their activated biochar to their gardens.
9. Understand how long it takes to produce 1kg of biochar; how much biochar is required to make 10kg activated biochar; and how much biochar is required to make 5kg of the smokeless briquettes.
10. Build interest and assess the level of interest in the slash for cash project.

Participant List:

1. Peugee Wilkie - Female (Tolaga Bay)
2. Keagan Maraki - Male (Gisborne)
3. Kalib Crawford-Whakataka - Male (Tolaga Bay)
4. Tawhipare Gray - Female (Tolaga Bay)
5. Greg Smith - Male (Waipiro Bay)
6. Roger Te Puni - Male (Ruatoria)
7. Mathew Te Puni (Black) - Male (Ruatoria)
8. Sheree Hailey - Female (Waipiro Bay)
9. Ngahina Chase - Female (Tolaga Bay)
10. Manaia Greer - Female (Tolaga Bay)
11. Rikayden Pardoe - Male (Tolaga Bay)
12. Sean Kemp - Male (Tolaga Bay)
13. Navarone Walker - Male (Tolaga Bay)
14. Junior Tuapawa - Male (Tolaga Bay)

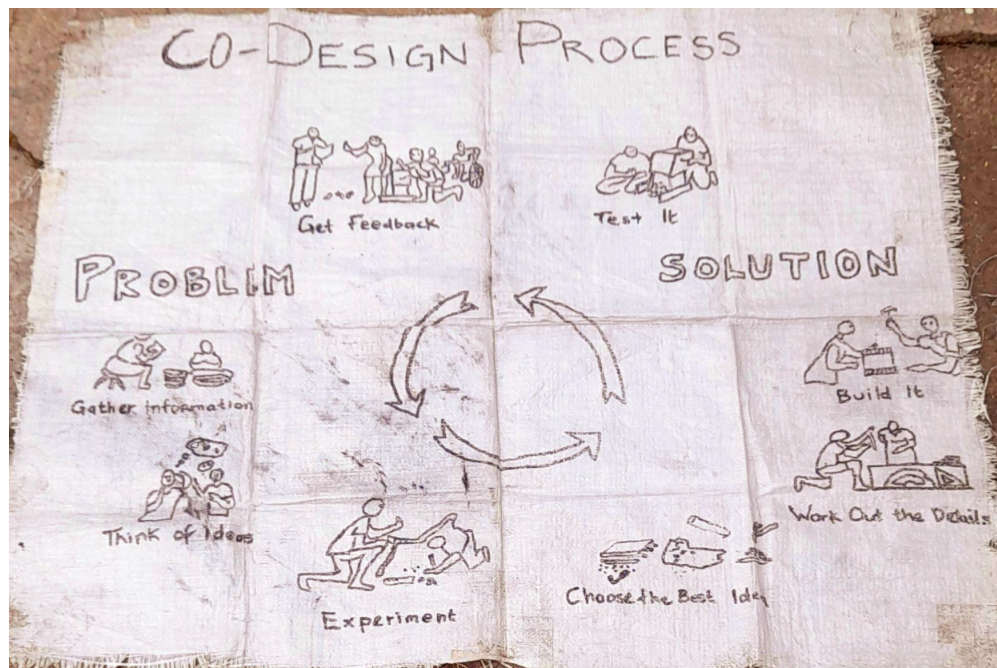


Design Facilitator Matene Maraki and Lead Instructor Thabiso Mashaba.

Day 1: Powhiri: Introduction to the Co-Creative Design Process: Team Building and Basic Metalworking to make a small metal bucket kiln. (Monday 22nd May 2023)



Participants, Facilitators, Supporters, Visiting EHF Fellows, Visiting ICP members from Hawaii and Hauiti Marae Leaders posing for a picture after the Powhiri to welcome all to Tolaga Bay and bless the work ahead.



Participants were introduced to the co-creative design process approach to community empowerment and technological development.



Participants went through a team building exercise by sharing the origin of their names; 3 things which are similar about them; 3 things which are different about them; coming up with a team song and dance; and coming up with their team name.



Design Facilitator Matene Maraki demonstrating how to make a small metal bucket kiln to the participants.



Participants working with manual tools to do some basic metalworking to make their own small metal bucket kilns.



Proud participants after completing their small metal bucket kilns.

Day 2: Carbonizing slash to make biochar (Thursday 25th May 2023)



A demonstration of how to carbonize slash using a small metal bucket kiln.



Pictures showing participants using their small metal bucket kilns to carbonize slash at the Uawa Beach and the biochar they produced.



Proud participants after carbonizing their own slash using their small metal bucket kilns at Uawa beach.

Day 3: Crushing biochar; Making activated biochar; storing activated biochar; making simple briquette presses; and making smokeless briquettes. (Monday 29th May 2023)



Crushing biochar into two forms for use to make activated biochar and smokeless briquettes.



A 60 liter bucket half full of activated biochar which is then stored for 2-3 days before applying it to the land. Another 60 liter bucket half full of slurry (sheep poo mixed with sheep pee) which was used to mix the crushed non-soluble to make the activated biochar.



Participants doing some basic woodworking and basic metalworking with manual tools and power tools to make their own simple briquette presses.



Proud participants after making their own simple briquette presses and smokeless briquettes.

Day 4: Applying activated biochar to a garden; making more smokeless briquettes; drying smokeless briquettes; community showcase and certificate awarding ceremony. (Thursday 1st June 2023).



Design Facilitator Matene Maraki demonstrating how to apply activated biochar to a garden.



Pictures depicting participants making more smokeless briquettes and smokeless briquettes being dried in the sun.



Participants showcasing their products and tools to members of the community, Hauiti Marae funders, media and supporters.



Managing Director of The Tolaga Bay Inn Charitable Trust and Tolaga Bay Innovation giving a motivational talk to the participants. Lead Instructor Thabiso Mashaba handing out certificates of completion to the participants.



More highlights from the certificate awarding ceremony.

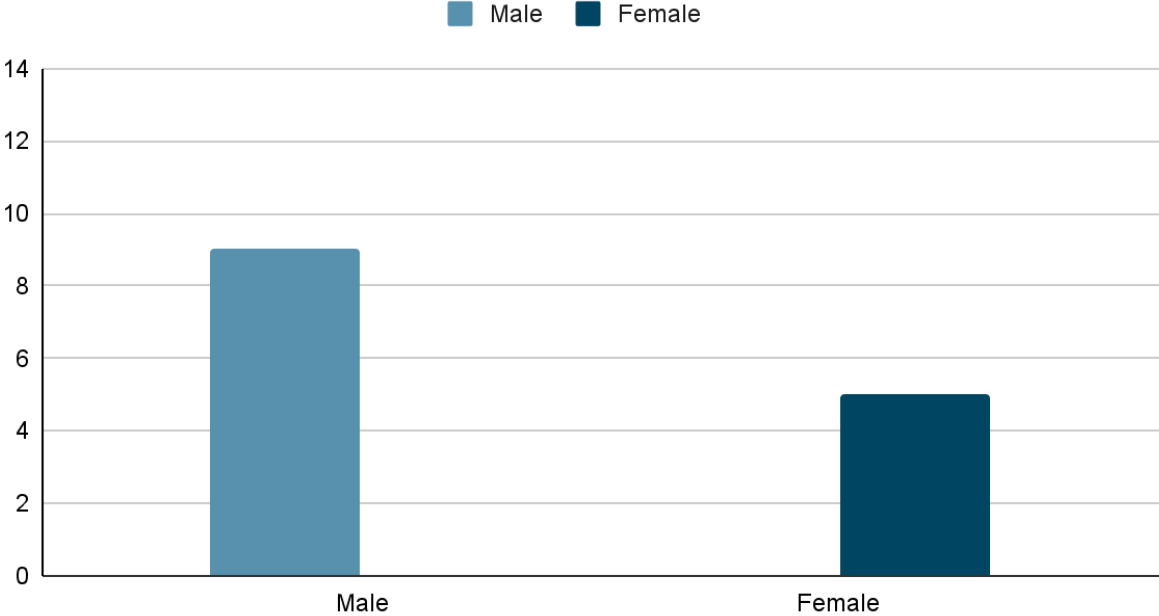


Proud graduates of the skills builder training with the training funders and instructors.

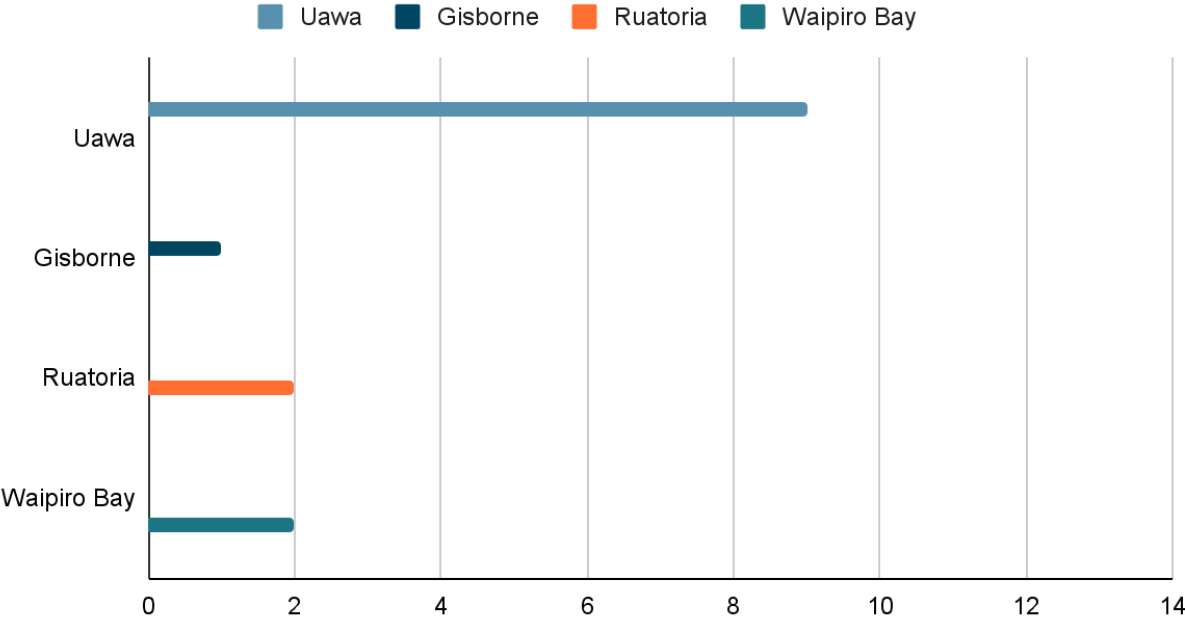
EVALUATION REPORT

Below are results of a post training survey taken by 14 of our 14 Participants on the 1st of June 2023.

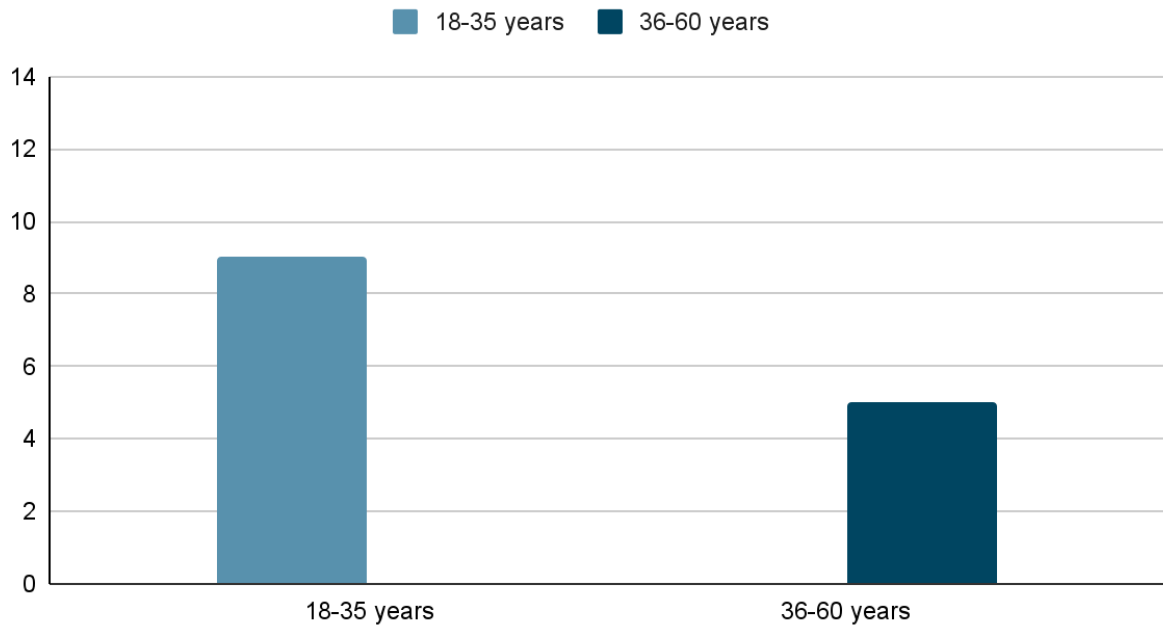
What is your Gender?



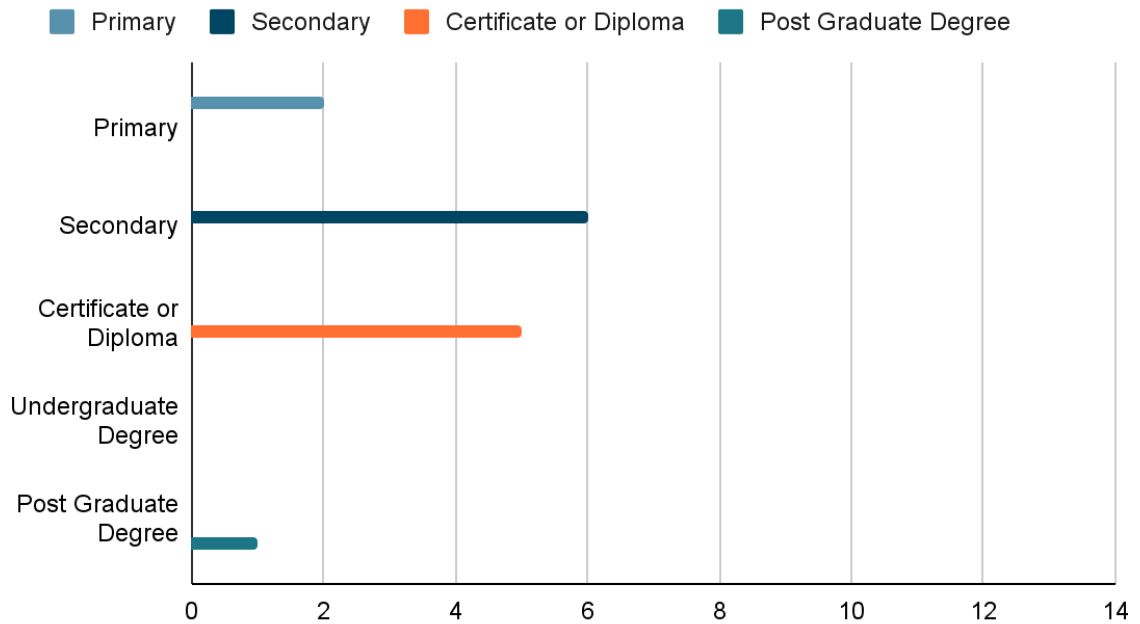
Where do you reside?



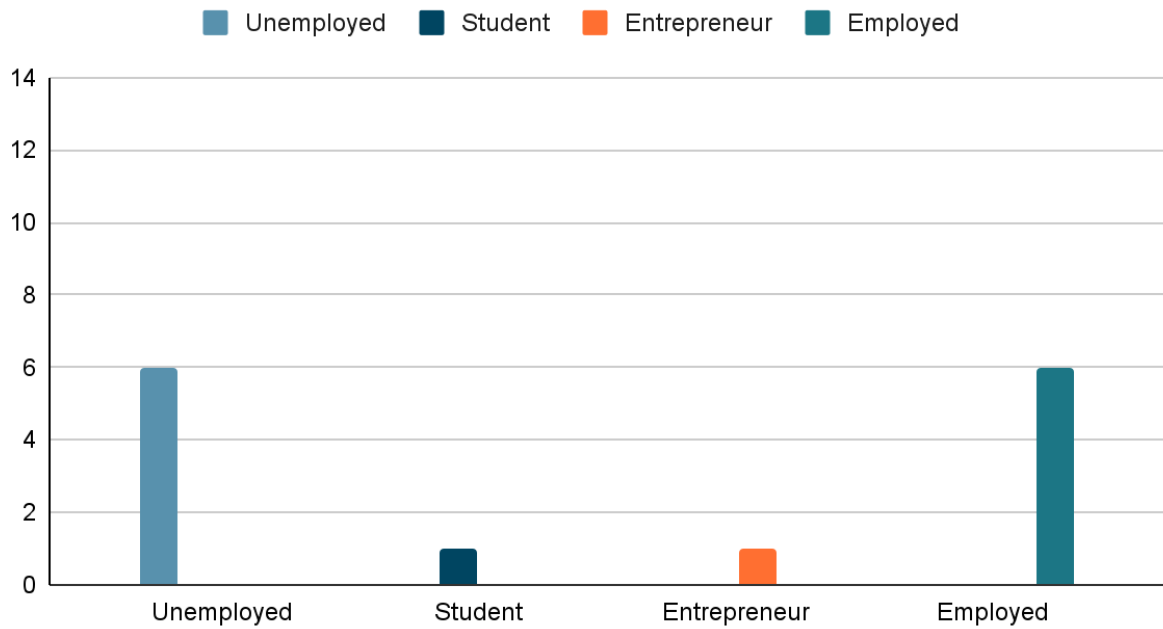
What is your age range?



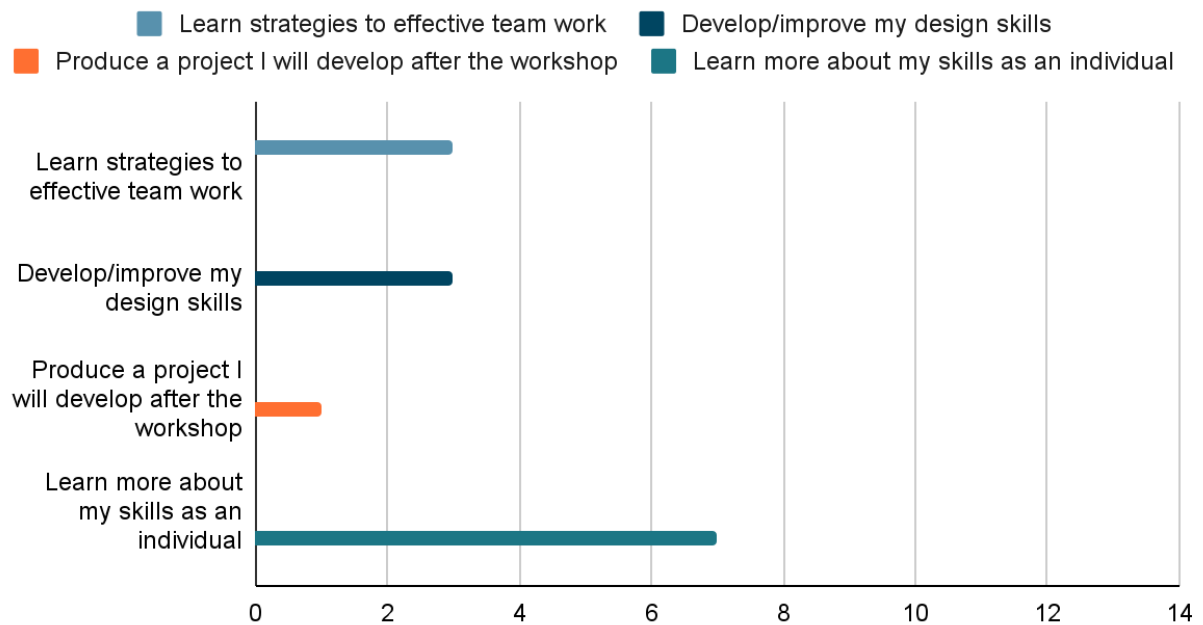
What is your educational level?



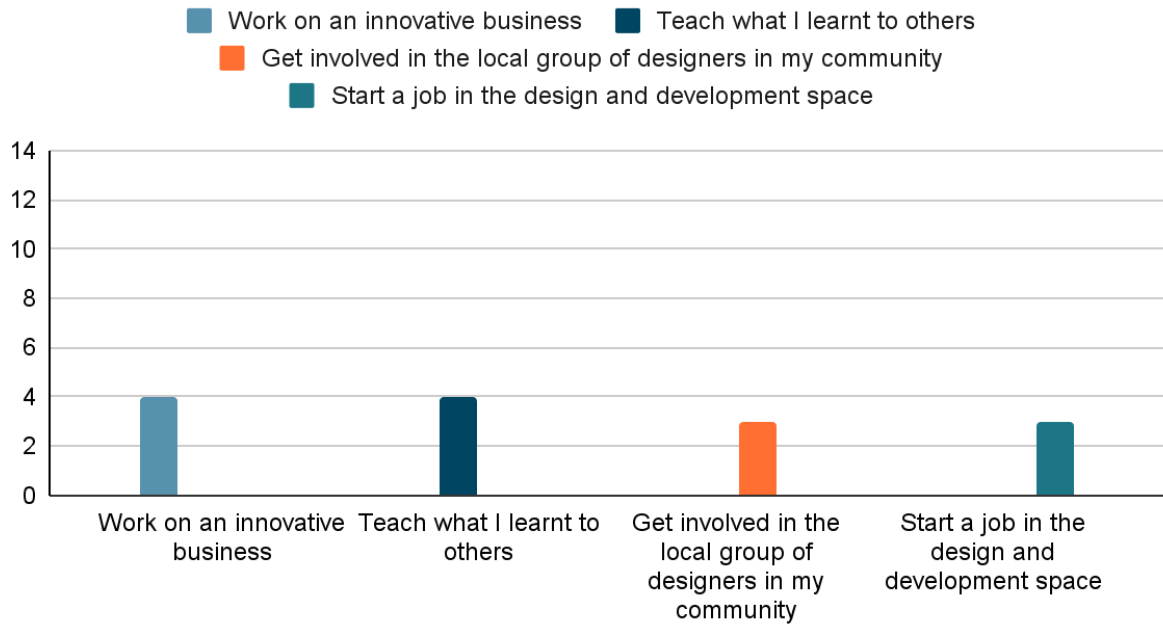
What is your profession?



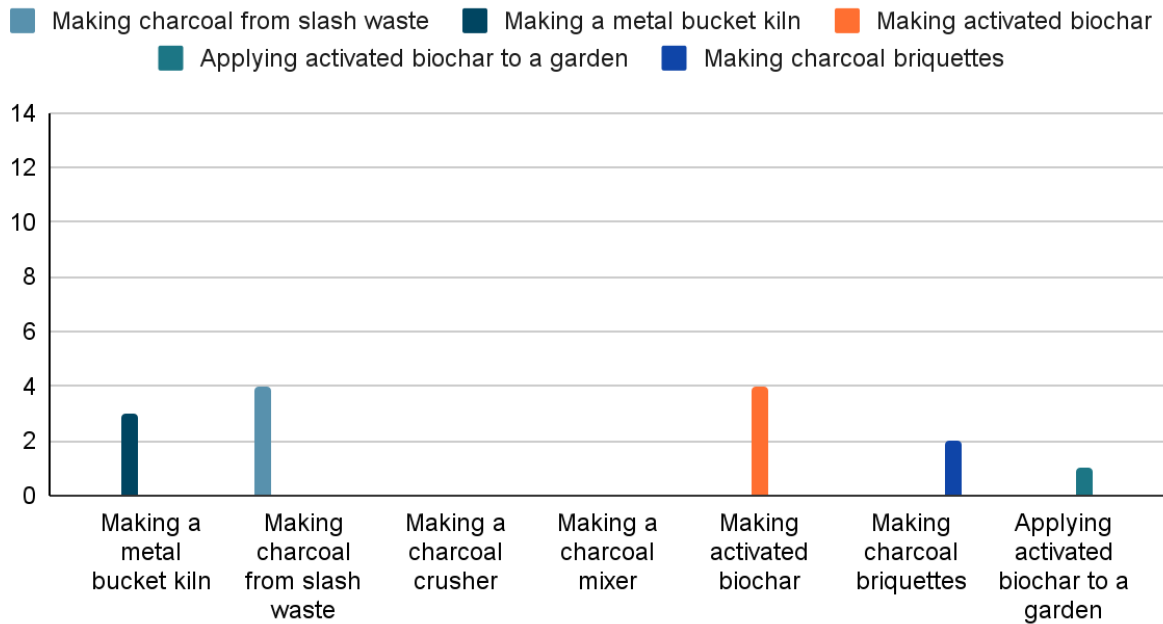
What are your short term goals?



What are your long-term goals?

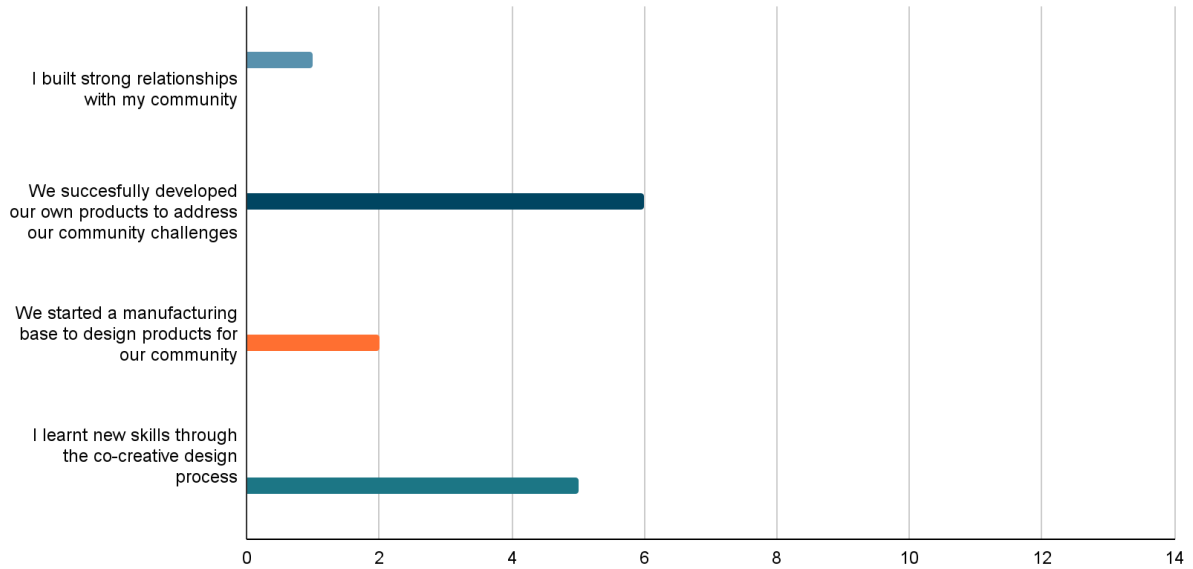


What was your favourite activity?



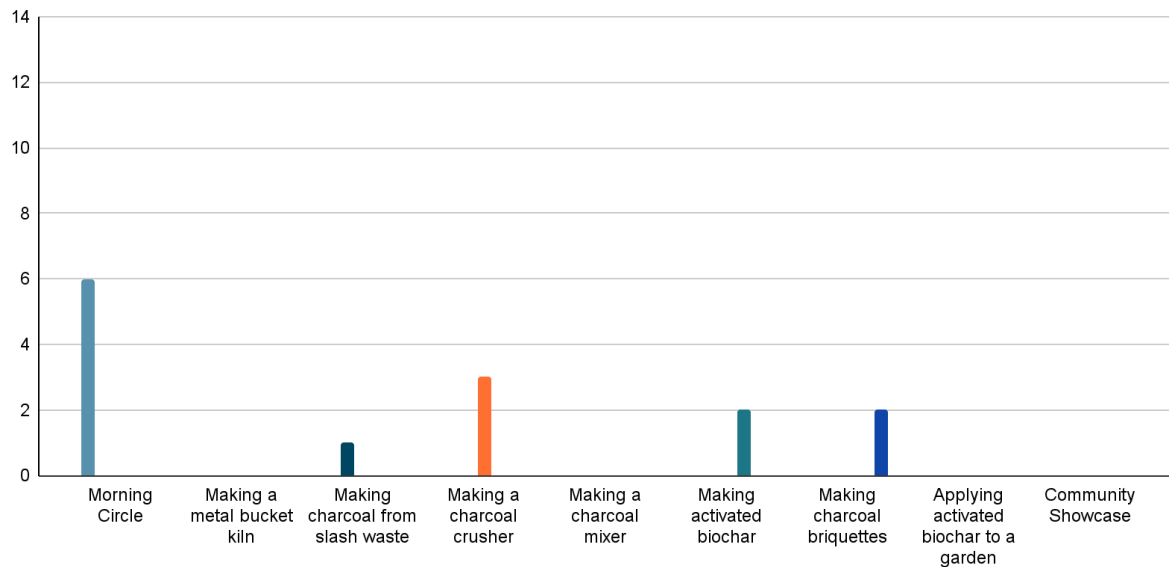
To me the skills builder workshop was a success because:

- I built strong relationships with my community
- We successfully developed our own products to address our community challenges
- We started a manufacturing base to design products for our community
- I learnt new skills through the co-creative design process

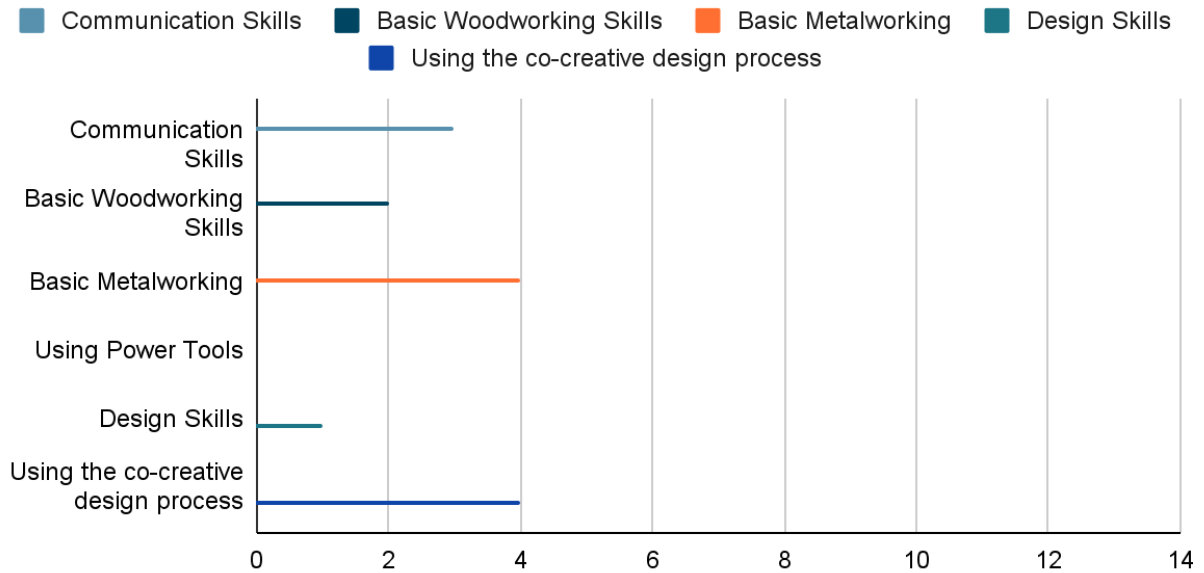


What was your favourite moment of the 2 weeks?

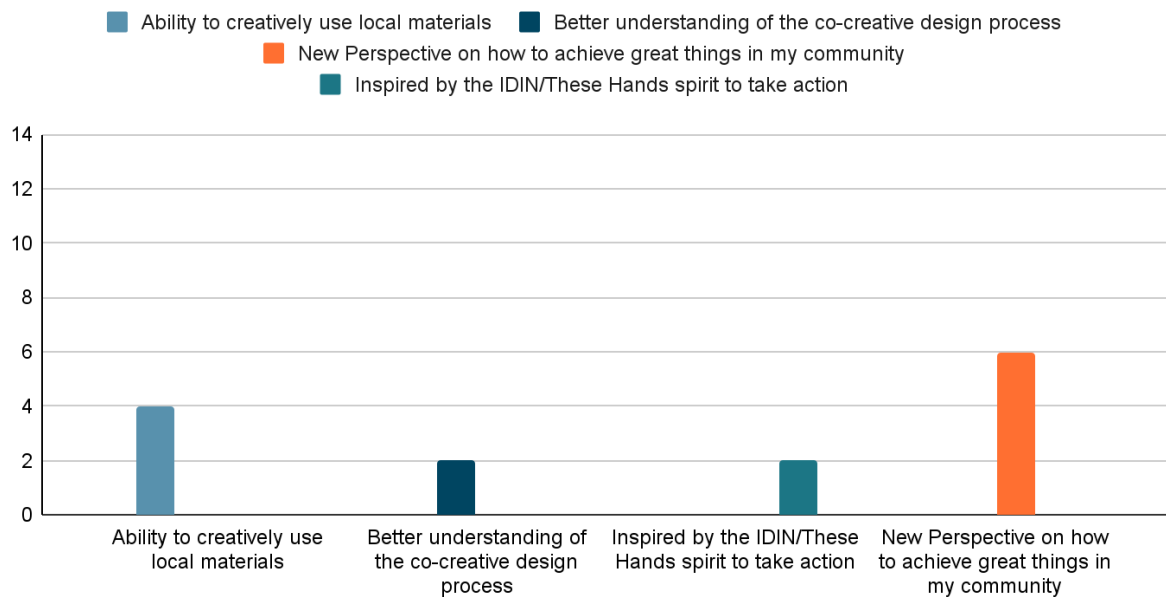
- Morning Circle
- Making charcoal from slash waste
- Making a charcoal crusher
- Making activated biochar
- Making charcoal briquettes



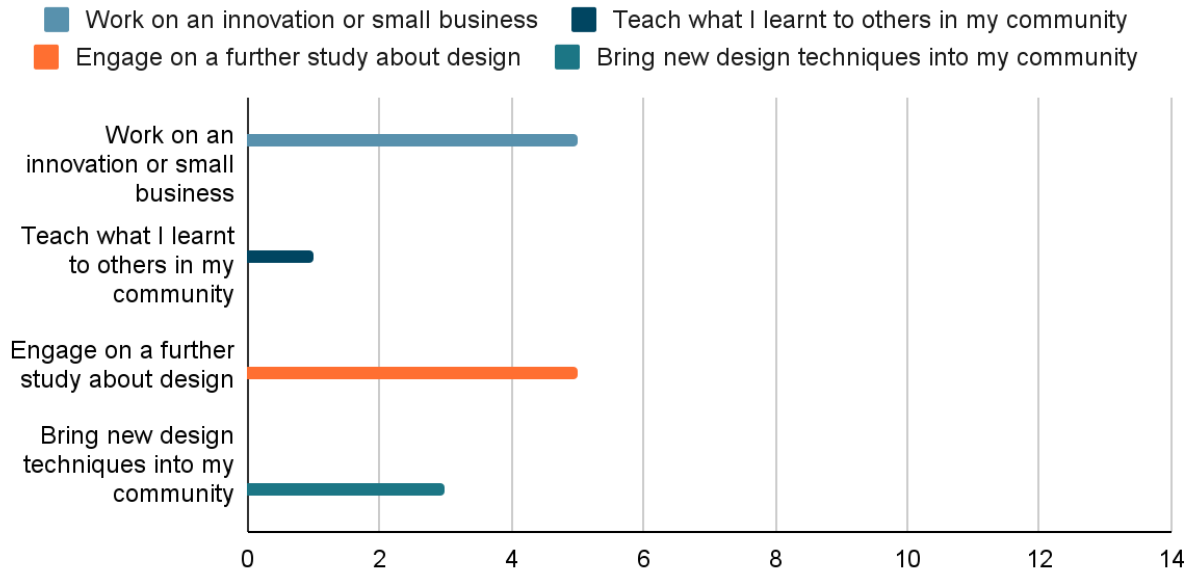
What skills have you gained as a result of participating in the training in 2 weeks?



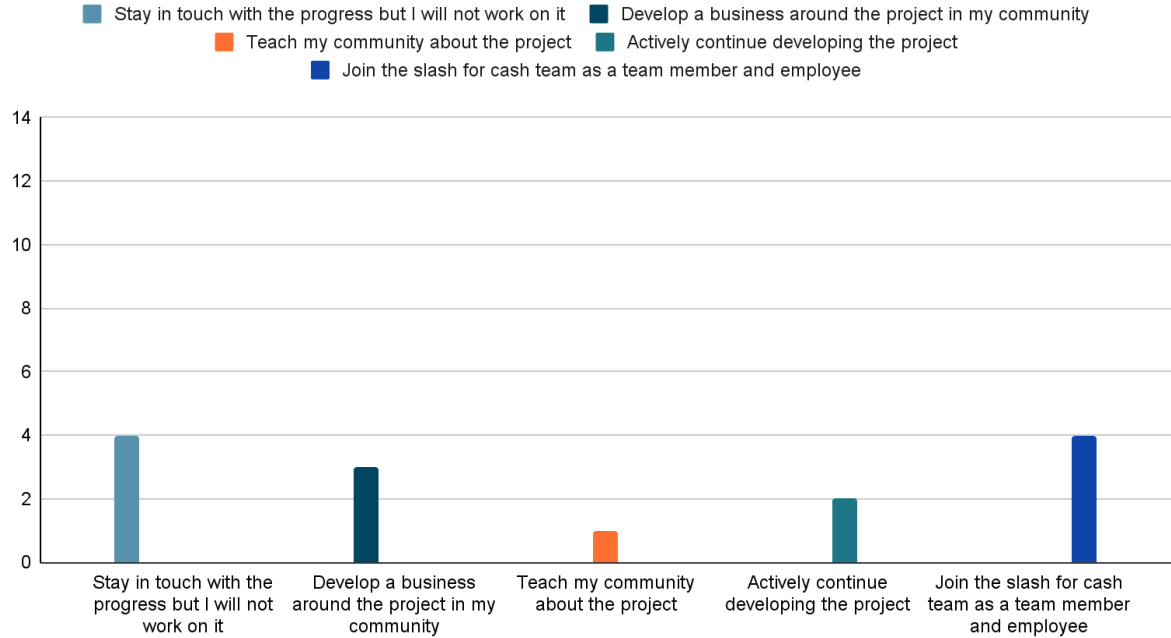
How has your attitude changed as a result of participating in the skills builder workshop in the 2 weeks?



Now that you have completed the skills builder workshop, what are your goals for the next 6 months?



How do you plan to continue working on your skills builder project in the future?



RESEARCH REPORT

1. We explored and timed the time it takes to carbonize the slash (mostly pine wood and willow wood) found on the uawa beach front.

It took exactly 1 hour 30 minutes to carbonize the slash to get 1 kg of biochar from one small metal bucket kiln.

2. We explored and weighed how much slurry and crushed biochar non-solubles it takes to make 10 kg of activated biochar.

It took 6 kg of slurry mixed with 12 kg of crushed biochar to make 18 kg of activated biochar. This means that it requires 2 kg of slurry mixed with 8 kg crushed biochar to make 10 kg of activated biochar.

3. We explored and weighed how much activated biochar needs to be applied to a small piece of a garden.

We applied 2 kg of activated biochar to a 90cm by 90cm small piece of the garden.

4. We explored and weighed how much crushed biochar powder it takes to mix with corn flour starch binder to make 5 kg of smokeless briquettes mix.

It took 500 g of corn flour starch binder to mix with 2kg of crushed biochar powder to make 2 kg of smokeless briquettes mix. This means that it takes 1250 g of corn flour starch binder mixed with 5 kg of crushed biochar powder to make 5 kg of smokeless briquettes mix.

5. We explored how many smokeless briquettes can be made from the smokeless briquette mix.

It took 2 kg of smokeless briquette mix to make 24 smokeless briquettes.

LEARNING REPORT

1. There is a demand for the solution in the 3 communities (Tolaga Bay, Tikitiki and Ruatoria) we had targeted.
2. All our participants see the solution having the potential to generate income for them whilst servicing very important causes of cleaning up the environment; potentially restoring the lands; and providing the community with an alternative clean fuel for cooking.
3. Most of our participants would like to teach what they learnt from the training to other people in their community.
4. Most of our participants enjoyed bonding with other participants using the co-creative design process approach.
5. Most of our participants are to explore how they can continue working on the project and start generating income from it.
6. All our participants enjoyed the training, having access to a community based workshop with basic tools and would like such hands-on training workshops to be offered regularly.
7. Our unemployed participants would be keen to attend such training workshops without skipping many days in order to get more things done.
8. Our participants from Gisborne, Ruatoria and Waipiro Bay would like the training to be brought closer to them in order for more people in these communities to attend.
9. Most community members in Tolaga bay that attend the community showcase are quite keen to purchase both the activated biochar for use in the gardens and the smokeless briquettes for use for cooking and their bbqs.
10. Beyond building relationships with the forestry companies, landowners, district councils and other Tairawhiti communities. It is important to also explore building relationships with farmers that can help us with slurry necessary to make activated biochar and unsellable maize that we can pound to make corn flour starch binder necessary to make smokeless briquettes mix.

NEXT STEPS

1. Offer other training workshops in Ruatoria, Waipiro Bay and Gisborne.
2. Do soil tests to test the effectiveness of the activated biochar on improving soil quality and water retention.
3. Do tests to test how long it takes for the smokeless briquettes to boil water and to burn out.
4. Make a presentation to Wairoa Council on the 20th of June 2023.
5. Run a skills builder training workshop in Wairoa with 44 participants.
6. Secure a relationship with 1 or 2 Forestry companies and landowners.
7. Develop a clearer business plan with clear costs and prices for each product or service offering.
8. Decide how to register the project for greater community benefit and sustainability of the project.
9. Fundraise to kick start phase 2 while phase 1 is still ongoing so our participants do not remain idle.
10. Run a creative capacity building workshop in August 2023 to apply the co-creative design process approach to other community challenges in depth.

THANK YOU

NGA MIHI