

Diversifying revenue in rural Africa through circular, sustainable and replicable biobased solutions and business models

Research and Innovation Action (RIA) Grant Agreement 101000762

D6.1: Local awareness raising campaigns: Specifications and action plans

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LIST OF ACRONYMS

AATF	African Agricultural Technology Foundation
ACEs	Area Cooperative Enterprises
AFAAS	African Forum for Agricultural Advisory Services
AGMs	Annual General Meetings
B2B	Business to Business
ВРЕ	Barcelona Plataforma Empresarial SL
CBOs	Community Based Organizations
CSOs	Civil Society Organisations
DFAs	District Farmer Organizations
нтс	Hydrothermal carbonization technology
iHUB	Agri Business Innovation Hub
INP-HB	Institut National Polytechnique Felix Houphouet-Boigny
KRC	Kabarole Research and Resource Centre
МТ	Metric tonne
NGOs	Non-Governmental Organisations
TV	Television
UASZ	Universite Assane Seck de Ziguinchor
WP	Work Package

Executive Summary

This report constitutes Deliverable D6.1 report on Local awareness raising on business and income diversification opportunities, which is a result of Task 6.1 of BIO4AFRICA H2020 project. The aim of Task 6.1 is to deploy a series of regional awareness raising campaigns to: a) inform our farmers and rural communities in Africa about the benefits of the bio-based solutions, income diversification opportunities that bio-based solutions offers and the means to seize income opportunities offered by the bio-based solutions; and b) to stimulate the engagement of women and youth in bio-based entrepreneurship by promoting an understanding of relevant challenges involved in the bio-based entrepreneurship and promoting an understanding on how to overcome challenges involved in the bio-based entrepreneurship.

This deliverable defines the campaign specifications of the BIO4AFRICA pilot cases in Uganda, Senegal, Cote d'Ivore and Ghana, and develops an action plan tailored to the needs and contexts of each pilot case, and also define sequence of activities to be performed for the campaign to succeed.

The key elements of Campaign Specification analyzed are the objectives of the campaign, campaign messages, channels to be used to share the messages, targeted audiences and the timeframe of the campaign. The deliverable defines awareness campaigns for different pilot cases with respect to their technologies and outputs. For Uganda pilot case, the technologies tested include a small scale green biorefinery, briquetting and hydrothermal carbonization technology (HTC). The outputs for Uganda pilot case include fibre/protein grass press cake as optimized ruminants' feed, protein concentrates as monogastric feed (pigs, poultry), protein whey as monogastric feed (pigs) and biochar for use as soil conditioner.

The pilot case for Cote d'Ivoire aims at the validation of 3 technologies which include pyrolysis for biochar production, pelletizing and bio-composites/Bioplastics production. Key outputs for this pilot case are biomass pellets for animal feed; biochar as adsorbent for treatment of drinking water and bio-composites/Bioplastics

The pilot case for Senegal intends to test 4 technologies including HTC, pyrolysis, briquetting and bio-composites production, giving the following outputs: Biochar briquettes to be used as solid fuel, biochar as additive for biogas production and biocomposites to be used as construction materials.

Finally, Ghana pilot case seeks to test 3 technologies which include small-scale green biorefinery, pyrolysis for biochar production and pelletising. The products for this pilot case are fibre/protein grass press cake as ruminants feed; protein concentrates as monogastric feed; protein whey as monogastric feed; protein concentrates as aquaculture feed; and biochar for use as soil conditioner.

1. Introduction

1.1 Introduction to Task 6.1

The global animal feed market size is evaluated at US\$352,918.177 million for the year 2020 and is projected to grow at a CAGR of 3.26% to reach US\$441,887.838 million in 2027. Animal feeds are referred to as those products which are responsible for improving animals' health. The feed is given in various doses depending on the animal.

The animal feed market is projected to grow at 4.90% to reach US\$460.322 billion by 2026, from US\$345.434 billion in 2020.

Consumption of animal products is projected to continue increasing at an alarming rate. By 2050, milk consumption in Africa is projected to increase by at least 50.3 million MT from 32.4 million MT in 2005/07 to about 83 million MT in 2050, whereas beef consumption is projected to reach 13.6 million MT from 4.7 million MT in 2005.07, an increase of 8.9 million MT.3 With respect to this data, it implies that the demand for the in fodder and animal feed will continue to increase exponentially. It is against this backdrop this this project seeks to promote production of animal feed production through small scale bio-refineries, among other products.

1.1.1 Task 6.1: Local awareness raising on business and income diversification opportunities

Task 6.1 is under Work Package 6 (WP6) of the Bio4Africa project. The WP6 objective is to raise awareness on opportunities offered by bio-based solutions to farmers and rural communities. The aim of task 6.1 is to deploy a series of regional awareness raising campaigns to:

To inform our farmers and rural communities in Africa about:

- Benefits of the bio-based solutions
- Income diversification opportunities that bio-based solutions offer
- Means to seize income opportunities offered by the bio-based solutions

To stimulate the engagement of women and youth in bio-based entrepreneurship by:

- Promoting an understanding of relevant challenges involved in the bio-based entrepreneurship
- Promoting an understanding on how to overcome challenges involved in the biobased entrepreneurship

To realize the above-mentioned aims, local awareness campaigns will be carried at local levels in the pilot countries, led by the local pilot case leaders in each of the country.

As Task 6.1 leader, EAFF is tasked with the role of define campaign specification for each pilot case and develop an action plan to rollout the campaign.

1.2 Key elements of Campaign Specification

The campaign specification comprises of the following:

- i) Objectives of the campaign
- ii) Campaign messages
- iii) Determining the channels to be used to share the messages
- iv) Analysis of the targeted audiences
- v) Timeframe of the campaign

1.3 General objectives of the campaign for the 4 pilot cases

- To sensitize youth about the business opportunities around the green biorefinery technology.
- To sensitize youth about the business opportunities around Pelletizing technology.
- To sensitize youth about the business opportunities around Pyrolysis technology.
- To sensitize youth about the business opportunities around the Bio-composites/ bioplastics technology.
- To sensitize youth about the business opportunities around the Briquetting technology.
- To sensitize youth about the business opportunities around HTC technology
- To sensitize women through fora/groups about bio-based solutions.
- To inform the public in general about the benefits of the bio-based solutions
- To sensitize rural communities about the income diversification opportunities that biobased solutions offer
- To inform the public about the means to take the income opportunities offered by the biobased solutions.

1.4 General tailored campaign messages for all the 4 pilot cases

1.4.1 Tailored message targeting agri-preneurs, smallholder farmers, development partners, local and national governments, multi-lateral organizations

Using Bio-based solutions as a precursor for employment and jobs creation

Using bio-based solutions for employment and job creation opportunities;

- Green biorefinery unit could create an assortment of new job opportunities
- Pelletizing technology for business opportunities and new jobs
- Pyrolysis technology for business opportunities and new jobs
- Bio-composites/bioplastics technology for business opportunities and new jobs.
- HTC technology for business opportunities and new jobs.
- Briquetting for business opportunities and new jobs.

1.5 Determining the channels to be used to share the messages

Factors to be considered in determining best channels to use for the campaign

- Availability of the messaging channels
- Accessibility of the channel by the target audience.
- Channel reach by the targeted audience.
- Cost of running the campaign through the channel
- Familiarity of the channel with the targeted audience.
- Flexibility of the channel to allow customization of the campaign message to suit the targeted audience.

1.6 Analysis of the channels available for the campaign

- Audio/Visual Media: Radio, TV
- Social media: YouTube, Facebook, Twitter.
- Key events: B2B events, AGMs, Congress, agricultural trade fairs, group meetings, community meetings, faith-based groupings events, etc.

1.7 Overall target audience for the 4 pilot cases

1.7.1 Target audience

- Smallholder livestock and crop farmers
- Extension and advisory service providers
- Livestock groups and cooperatives

- Crop associations and cooperatives
- Agrovet outlets
- Food security programs by the INGOs, local NGOs, local and National governments.
- Affirmative action programs
- Animal feed millers
- Animal feed miller associations.
- Women groups
- Youth groups
- Local governments
- National government departments on food and nutrition security, environment and climate change.
- Agriculture inputs dealers.
- Government agencies e.g. Youth Fund, Women Fund etc
- Financial service providers.
- Agriculture insurance service providers
- Agri-preneurs
- Civil Society organizations (CSOs): Especially those advocating for climate justice.
- Multi-lateral organizations.
- Local and International NGOs.
- Faith-based organizations
- Community Based Organizations (CBOs)
- Regional Economic blocks.
- EU funded projects and programs' beneficiary organizations in the Bio4Africa pilot countries and the region, within the agricultural scope.
- Extension and advisory service providers.
- Local governments administrations.
- Relevant national government ministries.
- Livestock products predecessors
- Consumers associations
- Academia and educational institutions
- Research centres, cooperative research networks and knowledge transfer organisations

2. Specific Pilot Case Campaign Specifications

2.1 Uganda pilot case campaign specifications

Technologies

The pilot case for Ugandan aims at the validation of the following technologies:

- Small scale green biorefinery
- ii. Briquetting
- iii. Hydrothermal carbonization technology (HTC).

Feedstocks to be used

The following are the feedstocks to be used in the Uganda pilot case:

Protein rich leguminous plants (Kalliandra, Tithuania, Blabla, Alfalfa, Mucuna beans, Butterfly Pea-Clitoria Ternatea, Lablab, Apios Americana), Napier (elephant) grasses, Cassava leaves and green rice leaves, Manure from cows fed with biorefinery outputs.

Outputs

- i) Fibre/protein grass press cake as optimized ruminants' feed
- ii) Protein concentrates as monogastric feed (pigs, poultry)
- iii) Protein whey as monogastric feed (pigs)
- iv) Biochar as soil conditioner

2.1.1 Objectives of the campaign

- To sensitize dairy farmers about the fibre/protein grass press cakes as animal feed.
- To sensitize dairy and beef farmers about the nutritional value of the fibre/protein grass
 press cakes as animal feed, and the increase in production of milk and beef as a result of
 the fibre/protein grass press cakes.
- To sensitize pig farmers about protein concentrate as animal feed
- To sensitize poultry farmers about the protein concentrate as poultry feed.
- To sensitize pig farmers about the nutritional value of the protein concentrate as animal feed, and the increase in pig's productivity as a result of the use of the protein concentrate.
- To sensitize farmers about biochar as a soil conditioner.

- To sensitize farmers about the increase in productivity as a result of the use of biochar as a soil conditioner.
- To sensitize farmers on incomes diversification through engagement in the production of protein rich leguminous plants such as Tithonia, Mucuna, Alfalfa and Napier (pakchong).
- To sensitize local entrepreneurs on the integration of small-scale green biorefinery in the forage and livestock agri-food system.
- To sensitize cooperatives on the integration of small-scale green biorefinery in the forage and livestock agri-food system.
- To sensitize farmers livestock farmers on the benefits of using bio-based solution products to reduce cost of production.
- To sensitize farmers on the diversification of incomes as a result of engagement in biobased solutions.

2.1.2 Tailored Messages to be developed

- Messages to inform farmers and rural communities about the benefits of the bio-based solutions in Uganda
- Messages to inform farmers and rural communities about the income diversification opportunities that bio-based solutions can offer in Uganda
- Messages to inform farmers and rural communities about the means to seize income opportunities offered by the bio-based solutions in Uganda
- Messages aimed at stimulating the engagement of women and youth in bio-based entrepreneurship
- Messages aimed at promoting an understanding of relevant challenges involved in the biobased entrepreneurship in Uganda
- Messages aimed at promoting an understanding how to overcome challenges involved in the bio-based entrepreneurship in Uganda.
- Messages aimed at sensitizing dairy and beef farmers about the use of the fibre/protein grass press cakes as animal feed.
- Messages aimed at sensitizing dairy and beef farmers about the nutritional value of the fibre/protein grass press cakes as animal feed, and the increase in production of milk and beef as a result of the fibre/protein grass press cakes.
- Messages aimed sensitizing pig farmers about protein concentrate as animal feed

Messages aimed at sensitizing pig farmers about the nutritional value of the protein

concentrate as animal feed, and the increase in pig's productivity as a result of the use of

the protein concentrate.

Messages aimed at sensitizing farmers about biochar as a soil conditioner.

Messages aimed at sensitizing farmers about the increase in productivity as a result of the

use of biochar as a soil conditioner.

Messages aimed at sensitizing farmers on incomes diversification through engagement in

the production of protein rich leguminous plants to be used feedstocks such as Tithonia,

Mucuna, Alfalfa and Napier (pakchong).

Messages aimed at sensitizing local entrepreneurs on the integration of small-scale green

biorefinery in the forage and livestock agri-food system.

Messages aimed at sensitizing cooperatives on the integration of small-scale green

biorefinery in the forage and livestock agri-food system.

Messages aimed at sensitizing youth about the business opportunities around the green

biorefinery

2.1.3 Tailored message for Uganda pilot case

a) Product: Press cake

Target audience: Dairy farmers

Key campaign message contents

Milk yield response

• Milk composition/quality

Intake by the dairy stock

• Increase in milk productivity per cow per day.

• Increase revenues per cow per day.

b) Product: Leaf Protein Concentrate

Target audience: Pig and poultry farmers

Key campaign message contents for the pig farmers

Intake of the leaf protein concentrate by the pigs

- Growth performance of the pigs
- Feed efficiency
- Carcass composition
- Increase in productivity per pig.
- Increase revenues per pig.

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Key campaign message contents for the poultry farmers

- Growth performance of the layers
- Feed efficiency
- Egg characteristics,
- Carcass composition
- Increase in eggs production.
- Increase revenues.

c) Product: Whey

Target audience: Pig farmers

Key campaign message contents

- Daily feed intake
- Average daily weight gain
- Feed conversion efficiency
- Increase in productivity per pig.
- Increase revenues per pig.

d) Product: Biochar from HTC

Target audience: Smallholder farmers

Key campaign message contents

- Benefits of biochar in soil amendment.
- Biochar soil amendment capacity in comparison to struvite and manure.
- Yield achievement as a result of using biochar for soil amendment
- Revenue increase per acre as a result of using biochar for soil amendment

2.1.4 Campaign messages around the feedstock

Targeted feedstocks:

- Tithonia,
- Mucuna
- Alfalfa
- Napier (pakchong)
- Productivity of each feedstocks per acre.
- Revenue change for the farmers engaged.
- Cost of production per acre.
- Duration of the crop in the field before harvesting.
- Ease of harvesting.

Targeted audience: Smallholder farmers

2.1.5 Key campaign message contents

- Productivity per acre
- Profitability/Return on investment per acre
- Market access
- Contracting mechanisms.
- Agronomic protocols.
- Access to the extension and advisory services.

2.1.6 Factors to be considered in determining best channels to use for the campaign

- Availability of the messaging channels
- Accessibility of the channel by the target audience.
- Channel reach by the targeted audience.
- Cost of running the campaign through the channel
- Familiarity of the channel with the targeted audience.
- Flexibility of the channel to allow customization of the campaign message to suit the targeted audience.

2.1.7 Analysis of possible channels to be used for the campaign messages distribution

- Audio/Visual Media platforms
 - Radio

- TV
- Social media:
 - **❖** YouTube
 - Facebook
 - Twitter
 - Instagram
 - **❖** TikTok
 - WhatsApp
- Print media
 - Newspapers
 - Magazines
 - Newsletters
- Organizations' websites.
- Key organizations events;
 - Business-to-Business meetings (B2Bs)
 - ❖ Annual General Meetings (AGMs)
 - Congress
 - ❖ Agricultural trade fairs
 - General group meetings.
- Agrovets Notice Boards
- Posters
- Pamphlets
- Banners
- Barazas (formal/informal fora by village administrative leadership)
- Local and international meetings within the subject matter.
- Roadshows
- Field days
- Structured courtesy calls to the relevant authorities.
- Market centres
- Journals
- Local chamber of commerce fora
- Local church events

- Group meetings
- Faith-based organization meetings

2.1.8 Key target audiences

- Smallholder dairy farmers
- Smallholder beef farmers
- Smallholder poultry farmers
- Smallholder pig farmers
- Smallholder fish farmers
- Extension officers
- Livestock groups and cooperatives
- Dairy, beef, pig and fish Commodity associations
- Dairy, beef, pig and fish Commodity cooperatives
- Crop associations and cooperatives
- Local veterinary officers
- Agrovet outlets
- Affirmative action programs
- Agriculture inputs dealers.
- Agri-preneurs
- Faith-based organizations
- Community Based Organizations (CBOs)
- Dairy products predecessors
- Beef products processors
- Poultry products processors
- Fish products processors

2.2 Campaign specifications for Cote d'Ivoire pilot case

Technologies to be used

The pilot case for Cote d'Ivoire aims at the validation of the following technologies, viz:

- i. Pyrolysis for biochar production
- ii. Pelletizing
- iii. Bio-composites/Bioplastics production

Feedstocks to be used

Forest area: small branches, thinning woods, and/or residues of wood processing, straw and husk of rice, empty cocoa shells, palm seed fibers, and palm roundups; Savannah area, cashew nuts, cassava skin and straw and rice husk

Outputs

The outputs from the above technologies are as follows:

- i) Biomass pellets for animal feed;
- ii) Biochar as adsorbent for treatment of drinking water;
- iii) Bio-composites/Bioplastics

2.2.1 Objectives of the campaign

- To sensitize farmers about biochar as a soil conditioner.
- To sensitize farmers about the increase in productivity as a result of the use of biochar as a soil conditioner.
- To sensitize farmers on incomes diversification through engagement in the production of Maize and tomato.
- To sensitize rural communities about biochar as a water purifier.
- To sensitize rural communities about the decrease in intestinal diseases due to drinking water parasites because of water filtration with biochar.
- To sensitize local agripreneurs on the integration of pyrolysis in the plant nutrition system.
- To sensitize cooperatives on the integration of biochar in the fertilizer supplying system.
- To sensitize youth about the business opportunities around the pyrolysis for biochar production.
- To sensitize women through fora/groups about bio-based solutions involving biochar use in agriculture.
- To sensitize cocoa and other cultivated tree producers about the use of bio-degradable containers made of bio-composites.
- To sensitize farmers about the pellet of tannin-enriched plants (*Leucaena leucocephala* and *Cajanus cajan*) as animal feed.

- To sensitize breeders about the nutritional and medicinal values of the pellet containing tanning plants as animal feed, and the increase in growth and in decrease of mortality rate of sheep as results of the pellet.
- To sensitize farmers about pellet sustainability and long-term conservation quality of this animal feed
- To sensitize sheep farmers about the nutritional value of the pellet as animal feed, and the increase in sheep and lamb productivity as results of the use of the pellet.

2.2.2 Tailored Messages to be developed

- Messages to inform farmers and rural communities about the benefits of the bio-based solutions in Côte d'Ivoire
- Messages to inform farmers and rural communities about the income diversification opportunities that bio-based solutions can offer in Cote d'Ivoire
- Messages to inform farmers and rural communities about the means to seize income opportunities offered by the bio-based solutions in Cote d'Ivoire
- Messages aimed at stimulating the engagement of women and youth in bio-based entrepreneurship
- Messages aimed at promoting an understanding of relevant challenges involved in the biobased entrepreneurship in Cote d'Ivoire
- Messages aimed at promoting an understanding how to overcome challenges involved in the bio-based entrepreneurship in Cote d'Ivoire.
- Messages aimed at sensitizing lamb/sheep farmers and poultry farmers about the use of the tannin enriched pellet as animal feed.
- Messages aimed at sensitizing lamb/sheep farmers and poultry farmers about the nutritional value of the tannin enriched pellet as animal feed, and about the increase in production of meat because of the tannin enriched pellet.
- Messages aimed at sensitizing rural communities about the biochar made filter as water filtration device to prevent dirty water induced intestinal diseases.
- Messages aimed at sensitizing farmers about biochar as a soil conditioner/amendment.
- Messages aimed at sensitizing farmers about the increase in productivity as a result of the use of biochar as a soil conditioner/amendment.

Messages aimed at sensitizing farmers on incomes diversification through engagement in

the production of tannin-enriched pellets from plants such as Leucaena leucocephala and

Cajanus cajan.

Messages aimed at sensitizing local entrepreneurs on the integration of small-scale

pelletization in the forage and livestock agri-food system.

Messages aimed at sensitizing cooperatives on the integration of small-scale pelletization

in the forage and livestock agri-food system.

• Messages aimed at sensitizing cocoa farmers and other cash crops farmers on the

agronomic and ecological advantages of the use of bio-degradable containers made of bio-

composites.

Messages aimed at sensitizing youth about the business opportunities around the

pelletization.

2.2.3 Tailored message for Cote d'Ivoire pilot case

e) Product: Bio-composites (bioplastics + vegetable fibers)

Target audience: Industrial sector

Key campaign message contents

Product: Tannin enriched Pellet

Target audience: sheep, lamb, and poultry farmers

Key campaign message contents for the sheep and lamb farmers

Intake of the tannin containing pellet by the animals

Growth performance of the animals

Feed efficiency

Carcass composition

Key campaign message contents for the poultry farmers

Growth performance of the layers

Feed efficiency

Egg characteristics,

Carcass composition

Product: Water filter

Key campaign message contents

- Benefits of using biochar as water purifier
- Water quality in rural areas
- Device efficiency
- Decrease rate of intestinal diseases caused by dirty water

Product: Biochar from Pyrolysis

Target audience: Smallholder farmers

Key campaign message contents

- Soil amendment capacity of the biochar
- Biochar soil amendment capacity in comparison to struvite and manure.
- Biochar as money saving soil additive

Campaign messages around the feedstock

Targeted feedstocks:

- Leucaena leucocephala
- Cajanus cajan

Targeted audience: Smallholder farmers, Breeders

Key campaign message contents

- Productivity Leucaena leucocephala and Cajanus cajan per acre
- Profitability/Return on investment per acre Leucaena leucocephala and Cajanus cajan per acre
- Market access Leucaena leucocephala and Cajanus cajan
- Contracting mechanisms for the production of Leucaena leucocephala and Cajanus cajan per by the smallholder farmers.
- Agronomic protocols for the production of Leucaena leucocephala and Cajanus cajan.

2.2.4 Distribution of the channels under different categories

- Availability of the messaging channels
- Channels targeting farmers
- Channels targeting buyers
- Channels targeting the youth

- Channels targeting women
- Channels targeting general rural communities.
- Channels targeting farmer cooperatives, groups and Community Based Organizations (CBOs)

2.2.5 Analysis of the channels available

- Audio/Visual Media: Radio, TV
- Social media: YouTube, facebook, Twitter.
- Key events B2B events, AGMs, Congress, agricultural trade fairs, group meetings, community meetings, faith-based groupings events, etc.

2.2.6 Target audiences

- Maize farmers
- Tomato farmers
- Crop farmers
- Cash crops farmers
- Women
- Youth
- Maize cooperatives
- Tomato cooperatives
- Cocoa cooperatives
- Cashew farmers
- Cashew cooperatives
- Youth groups
- Women groups
- Government agencies e.g. Youth Fund, Women Fund etc
- Financial service providers.
- Agri-preneurs

2.3 Campaign specifications for the Senegal pilot case

Technologies

The pilot case for Senegal aims at the validation of the following technologies:

i) HTC

- ii) Pyrolysis
- iii) Briquetting
- iv) Bio-composites production

Feedstocks to be used

The following feedstocks will be used for the Senegal pilot case:

Peanut shells, cashew hulls/apples, rice husk, Typha, small branches, thinning woods, and/or residues of wood processing

Outputs

- i) Biochar briquettes to be used as solid fuel
- ii) Biomass briquettes to be used as solid fuel;
- iii) Biochar as additive for biogas production
- iv) Bio-composites to be used as construction materials

2.3.1 Objectives of the campaign for Senegal pilot

- To sensitize farmers about biochar as a soil conditioner.
- To sensitize farmers about the increase in productivity as a result of the use of biochar as a soil conditioner.
- To sensitize rural communities about chacrcoal briquettes as fuel for cooking.
- To sensitize farmers on incomes diversification through engagement in the production of Peanuts, Cashew nuts, Millet, and Corn, whose biomass is used as raw material for the production of Biochar, Charcoal briquettes, pellets/granueles, biogas.
- To sensitize local agripreneurs on the integration of pyrolysis in the plant nutrition system.
- To sensitize cooperatives on the integration of biochar in the fertilizer supplying system.
- To sensitize youth about the business opportunities around the pyrolysis for biochar production.
- To sensitize women through fora/groups about bio-based solutions involving biochar use in agriculture.
- To sensitize rural communities about pellets/granueles biomass as fuel for cooking.
- To sensitize rural communities about biogas as fuel for cooking.

2.3.2 Tailored Messages to be developed

- Messages to inform farmers and rural communities about the benefits of the bio-based solutions in Senegal: Rural farming communities aren't aware about the bio-based solutions. Therefore the messages developed will be aimed at ensuring they are aware of such technologies and how they can benefit from them. Messages will be made in a language that they can understand.
- Messages to inform farmers and rural communities about the income diversification opportunities that bio-based solutions can offer in Senegal. Rural communities have limited revenue streams. They will be
- Messages to inform farmers and rural communities about the means to seize income opportunities offered by the bio-based solutions in Senegal.
- Messages aimed at stimulating the engagement of women and youth in bio-based entrepreneurship in Senegal.
- Messages aimed at promoting an understanding of relevant challenges involved in the biobased entrepreneurship in Senegal.
- Messages aimed at promoting an understanding how to overcome challenges involved in the bio-based entrepreneurship in Senegal
- Messages aimed at sensitizing farmers about biochar as a soil conditioner.
- Messages to sensitize farmers about the increase in productivity as a result of the use of biochar as a soil conditioner.
- Messages to sensitize rural communities about chacrcoal briquettes as fuel for cooking.
- Messages to sensitize farmers on incomes diversification through engagement in the production of Peanuts, Cashew nuts, Millet, and Corn, whose biomass is used as raw material for the production of Biochar, Charcoal briquettes, pellets/granueles, biogas.
- Messages to sensitize local agripreneurs on the integration of pyrolysis in the plant nutrition system.
- Messages to sensitize cooperatives on the integration of biochar in the fertilizer supplying system.
- Messages to sensitize youth about the business opportunities around the pyrolysis for biochar production.
- Messages to sensitize women through fora/groups about bio-based solutions involving biochar use in agriculture.

- Messages to sensitize rural communities about pellets/granueles biomass as fuel for cooking.
- Messages to sensitize rural communities about biogas as fuel for cooking.

2.3.3 Tailored message for the Senegal pilot case

Product: Biochar for soil amendment

Target audience: Smallholder farmers

Key campaign message contents

- Benefit of biochar as soil amendment agent
- Biochar soil amendment capacity in comparison to struvite and manure.
- Biochar as money saving soil additive

Product: Charcoal briquttes

Target audience: Rural communities

Key campaign message contents

- Availability of the briquettes.
- Efficiency of the briquettes in cooking: How long does it take to cook using briquetes as compared to the firewood, charcoal, electricity, gas, etc.
- Cost saving in using briquettes as cooking fuel.
- Health benefits for using briquettes as cooking fuel as opposed to firewood.
- Environmental benefits for using briquettes for cooking as opposed to firewood.
- Environmental benefits for using briquetes: Quality air, environmental contamination levels as compared to charcoal.

Raw materials: Peanuts, Cashew nuts, Millet, and Corn

Target audience: Rural smallholder Peanuts, Cashew nuts, Millet, and Corn farmers

Key campaign message contents

- Productivity Peanuts, Cashew nuts, Millet, and Corn per acre
- Profitability/Return on investment per acre Peanuts, Cashew nuts, Millet, and Corn per acre
- Market access Peanuts, Cashew nuts, Millet, and Corn

- Contracting mechanisms for the production of Peanuts, Cashew nuts, Millet, and Corn per by the smallholder farmers.
- Agronomic protocols for the production of Peanuts, Cashew nuts, Millet, and Corn.

Product: Pellets/Granueles biomass

2.3.4 Factors to be considered in determining best channels to use for the campaign

- Availability of the messaging channels
- Accessibility of the channel by the target audience.
- Channel reach by the targeted audience.
- Cost of running the campaign through the channel
- Familiarity of the channel with the targeted audience.
- Flexibility of the channel to allow customization of the campaign message to suit the targeted audience.

2.3.5 Analysis of possible channels to be used for the campaign messages distribution in Senegal

- Audio/Visual Media platforms
 - Radio
 - TV
- Social media:
 - ❖ YouTube
 - Facebook
 - Twitter
 - Instagram
 - **❖** TikTok
- Print media
 - Newspapers
 - Newsletters
- Organizations' websites.
- Key organizations events;
 - Business-to-Business meetings (B2Bs)
 - Annual General Meetings (AGMs)
 - Congress

- ❖ Agricultural trade fairs
- General group meetings.
- Agrovets Notice Boards
- Posters
- Pamphlets
- Banners
- Barazas (formal/informal fora by village administrative leadership)
- Local and international meetings within the subject matter.
- Field days
- Structured courtesy calls to the relevant authorities.
- Market centres
- Local chamber of commerce fora
- Local church events
- Faith-based organization meetings

2.3.6 Target audiences

- Corn farmers
- Millet farmers
- Peanuts farmers
- Cashew nut farmers
- Women
- Youth
- Corn cooperatives
- Millet farmer groups
- Cashew nut cooperatives
- Peanut farmer groups
- Youth groups
- Women groups
- Government agencies e.g. Youth Fund, Women Fund etc
- Financial service providers.
- Agri-preneurs

2.4 Campaign specifications for the Ghana pilot case

Technologies

- i) Small-scale green biorefinery
- ii) Pyrolysis for biochar production
- iii) Pelletising

Feedstocks to be used

Crop residue from legumes, cereals, tubers, fruits, and vegetables e.g. cowpea, groundnuts, soybeans, maize, millet, sorghum, wheat, yam, cassava, sweet potatoes, cabbage, lettuce, spinach, etc. Local forage species like Andropogon gayanus, Pennisetium Purpureum, Lucaena Leucocephala, etc.

Outputs

- i) Fibre/protein grass press cake as ruminants feed;
- ii) Protein concentrates as monogastric feed;
- iii) Protein whey as monogastric feed;
- iv) Protein concentrates as aquaculture feed;
- v) Biochar as soil conditioner

2.4.1 Objectives of the campaign

- To sensitize farmers about biochar as a soil conditioner.
- To sensitize farmers about the increase in productivity as a result of the use of biochar as a soil conditioner.
- To sensitize local agripreneurs on the integration of pyrolysis in the plant nutrition system.
- To sensitize cooperatives on the integration of biochar in the fertilizer supplying system.
- To sensitize youth about the business opportunities around the pyrolysis for biochar production.
- To sensitize women through fora/groups about bio-based solutions involving biochar use in agriculture.
- To sensitize farmers about pellet sustainability and long-term conservation quality of this animal feed

2.4.2 Tailored messages for the Ghana pilot case

Messages for the smallholder farmers producing feedstocks in Ghana

Available feedstock in the pilot communities include:

- Crop reside (pigeon peas, cowpea haulms, soybeans haulms, groundnut haulms rice straw, etc),
- Grasses (panicunm minimum, guinea grass, andopogon guyanus, heteropogon hamata, stylosanthes guineanensis, centrocema pubescence, albizia, and leuceanea).

Benefits to the farmers in Ghana

- Diversification of farmers' revenues
- Increased incomes by the farmers
- Employment opportunities for the women and youth in the feedstocks value chains.
- 2.4.3 Tailored messages targeting agri-preneurs, environmental CSOs, on the use of the green biorefinery

Benefits of using green bio-refinery

- The ability of the equipment to produce feed for various livestock (cows, bulls, pigs, piglets, sheep, goats, donkeys, etc).
- Efficient use of diverse biomass/crop residue to increase the nutrition of livestock.
- Feed produced reduces the emission of greenhouse gases thus promoting climate change adaptation and mitigation.
- Produces protein concentrates that can be used as a raw material to produce pellets for aquaculture trials.
- Easy to operate, and repair and maintain.
- 2.4.4 Tailored messages on palletisation (Fish feed pellets production), targeting agri-preneurs, cooperatives, animal feed millers, etc

Benefits of pelletization

- Technology used is cost efficient.
- Technology is adaptable to the local conditions in which the trials will be conducted.
- The machine used is easy to operate, repair and maintain.
- The equipment can operate using various feedstock/biomass for the production of pellets.
- Efficient power (electricity) requirement.
- The equipment can produce a wide range of pellets
- Technology used can produce pellets (floats) for fish rearing
- 2.4.5 Tailored messages around biochar, targeting smallholder farmers, agri-preneurs, etc

Technology: Pyrolysis

Products:

The equipment design include combustion chambers, with furnace for the efficient thermal decomposition of biomass at elevated temperature (pyrolysis). The production capacity of the equipment range 60Kg – 350Kg. The technology is environmentally friendly with the combustion chambers and furnace designed to control the emission of thermal decomposed gases.

The biotechnology selected is the best option due to the following factors:

- Biochar as semi charcoal dust to be used as soil amendment
- Feedstock is from waste biomass from crops, i.e., rice husk, groundnut husk, corn cobs, maize stalks
- The technology is cost efficient.
- The technology is adaptable to the local conditions in which the pilot trials will be conducted.
- The equipment is suitable for various biomass/crop residue.
- It is mobile and thus easy to transport from one community to another for the pilot activities.
- Easy to operate, maintain and repair by farmers and other agro-value chain actors.
- Organically and environmentally friendly product that guarantees soil and human health

2.4.6 Tailored messages for the cooperatives, women, youth, agripreneurs, etc, on green biorefinery

- there exists an arrangement between crop producers and livestock raisers for crop residues
 in exchange for animal manure through a barter arrangement. Now there is barter trade
 between crop farmers and livestock producers for dungs of animals in exchange for crop
 residue.
- There is a high demand for feed products because of the focus on fattening of animals.
- There is still a big market that is not met, so new businesses would be well accepted.
- There is the potential to access some raw material-for example Cotton seed from Burkina Faso as inputs for producing the feed products.
- There is not a well-established competition in feed products and no well-established animal feed/forage producers. This presents a good opportunity for business people in the industry Particularly for biochar as a soil amendment product; producing biochar in larger quantities can present the opportunity to explore the cultivation of vegetables in soilless media. Industry would have a higher demand for biochar for vegetable production.

- There would be a great opportunity to grow the industry and allied businesses faster. More
 players would be added to the value chain especially local feed producers, feed marketers
 and transporters among others.
- There would also be the possibility of an all-year production of raw feed material, based on the capacity of the technologies and would encourage involvement of more farmers in the production of animal feed.
- More actors would be encouraged to engage in production of livestock/animals based on the potential of the technology.
- there would be more patronage by animal farmers that would encourage more people to produce animals, hence increased demand for feed products.

3. Action plan

3.1 Bio4Africa awareness campaign action plan

Goal:

To deploy a series of regional awareness raising campaigns on the opportunities offered by the biobased solutions to farmers and rural communities

3.2 Evidence of Success

Farmers are well informed about the:

- Benefits of the bio-based solutions
- Income diversification opportunities that bio-based solutions offer
- Means to seize income opportunities offered by the bio-based solutions

Women and youth have been stimulated to engage in bio-based entrepreneurship after:

- Getting aware of relevant challenges involved in the bio-based entrepreneurship
- Being informed on how to overcome challenges involved in the bio-based solutions entrepreneurship

3.3 Evaluation Process

Evaluation of deployment of local awareness creation campaign will be to determine the level of achievement of the targeted goal of the campaign. The baseline data will be collected before the campaign is rolled out, and the endline data will be collected through a survey at the end of the project. Data analysis will be carried out to determine the level of achievement of the set campaign goal.

4. Local pilot awareness campaigns Activity plan and Budget

4.1 UGANDA

Table 1: Local awareness campaign activity plan and budget for Uganda

Activity	Activity description and rationale	Date	Respons ible
Organization of local Stakeholder	This is a one-day-stakeholders' event. Participants will be drawn from the districts close to Fort Portal so that, they can come early hours of the morning and return same day (No accommodation).	Jan 2023	AFAAS
Engagement Event in Fort	Costs include transport reimbursement and lunch for the participants.		
Portal, at KRC	Description of the targeted participants:		
	Category A: Dairy, beef, poultry, piggery, crops value chains cooperatives leadership, District Farmer Associations leaders, Area Cooperative Enterprises leaders (for this category we can have 1 participant per grouping, i.e., Board chairperson or manager). Total pax = 10		
	Category B: Youth and women groups leadership, those who are engaged in the dairy, beef, poultry, piggery, crops value chains. The number of participants should be 1 pax per group. Selected person should have capacity to cascade the awareness campaign to the rest of group. Total pax = 5		
	Category C: Local and national government personnel, including, Extension staff, relevant government departments. Total pax = 5		
	Category D: Strategic agrovets dealers, distributors of animal feeds, strategic animal feed processors. Total pax = 5		
	Category E: Media personnel. Strategic personnel from the local and national newspapers, Radio and TV stations. Total pax = 3		
	Category F: Local and National social media influencers. We can have at most 1 participant each for Youtuber, Facebook, Twitter, TikTok, Instagram influencers (each influencer should be commanding a significant influence in his/her relevant social media platform. Total pax = 5		
	Category G: Relevant NGOs & CSOs organization including, Faith Based Organizations, Affirmative action programs, financial service with farmer friendly financial products. Total pax 5.		
	Category H: Implementing agencies of the ongoing EU projects in Agriculture, food security, climate change, water and environment. Total pax = 5		
	Category I: Research and academia; Personnel from the relevant departments will be targeted. Total pax = 2		
	GRAND TOTAL PAX = 45		
Organization of local Stakeholder	This is a one-day-stakeholders' event. Participants will be drawn from the districts close to Fort Portal so that, they can come early hours of the morning and return same day (No accommodation).	Jan 2023	AFAAS
Engagement	Costs include transport reimbursement and lunch for the participants.		

Event in	Description of the targeted participants:		
Mbarara	Category A: Dairy, beef, poultry, piggery, crops value chains cooperatives leadership, District Farmer Associations leaders, Area Cooperative Enterprises leaders (for this category we can have 1 participant per grouping, i.e., Board chairperson or manager). Total pax = 10		
	Category B: Youth and women groups leadership, those who are engaged in the dairy, beef, poultry, piggery, crops value chains. The number of participants should be 1 pax per group. Selected person should have capacity to cascade the awareness campaign to the rest of group. Total pax = 5		
	Category C: Local and national government personnel, including, Extension staff, relevant government departments. Total pax = 5		
	Category D: Strategic agrovets dealers, distributors of animal feeds, strategic animal feed processors. Total pax = 5		
	Category E: Media personnel. Strategic personnel from the local and national newspapers, Radio and TV stations. Total pax = 3		
	Category F: Local and National social media influencers. We can have at most 1 participant each for Youtuber, Facebook, Twitter, TikTok, Instagram influencers (each influencer should be commanding a significant influence in his/her relevant social media platform. Total pax = 5		
	Category G: Relevant NGOs & CSOs organization including, Faith Based Organizations, Affirmative action programs, financial service with farmer friendly financial products. Total pax 5.		
	Category H: Implementing agencies of the ongoing EU projects in Agriculture, food security, climate change, water and environment. Total pax = 5		
	Category I: Research and academia; Personnel from the relevant departments will be targeted. Total pax = 2 GRAND TOTAL PAX = 45		
local Stakeholder	This is a one-day-stakeholders' event. Participants will be drawn from the districts close to Fort Portal so that, they can come early hours of the morning and return same day (No accommodation).	Jan 2023	AFAAS
Engagement Event in	Costs include transport reimbursement and lunch for the participants.		
Kampala	Description of the targeted participants:		
	Category A: Dairy, beef, poultry, piggery, crops value chains cooperatives leadership, District Farmer Associations leaders, Area Cooperative Enterprises leaders (for this category we can have 1 participant per grouping, i.e., Board chairperson or manager). Total pax = 10		
	Category B: Youth and women groups leadership, those who are engaged in the dairy, beef, poultry, piggery, crops value chains. The number of participants should be 1 pax per group. Selected person should have capacity to cascade the awareness campaign to the rest of group. Total pax = 5		
	I .		

	Category C: Local and national government personnel, including, Extension staff, relevant government departments. Total pax = 5		
	Category D: Strategic agrovets dealers, distributors of animal feeds, strategic animal feed processors. Total pax = 5		
	Category E: Media personnel. Strategic personnel from the local and national newspapers, Radio and TV stations. Total pax = 3		
	Category F: Local and National social media influencers. We can have at most 1 participant each for Youtuber, Facebook, Twitter, TikTok, Instagram influencers (each influencer should be commanding a significant influence in his/her relevant social media platform. Total pax = 5		
	Category G: Relevant NGOs & CSOs organization including, Faith Based Organizations, Affirmative action programs, financial service with farmer friendly financial products. Total pax 5.		
	Category H: Implementing agencies of the ongoing EU projects in Agriculture, food security, climate change3 water and environment. Total pax = 5		
	Category I: Research and academia; Personnel from the relevant departments will be targeted. Total pax = 2 GRAND TOTAL PAX = 45		
	Total budget for the 3 events		
Local Radio presentation on Bio4Africa products in Uganda	KRC Radio station will be used. At least 3 programs with significant audience will be secured. Radio journalists to be engaged needs to be the ones invited in the Local awareness stakeholder's event. It should be noted that the budget set for this activity is not an advertisement fee, but an appreciation of the work done. Therefore, journalists friendly to the organizations (AFAAS/KRC) should be engaged.	Jan 2023	KRC
National and Local newspapers	2 articles will be published each in the national newspaper and local newspapers.	Jan 2023	AFAAS/K RC
articles on Bio4Africa products in Uganda are published	Newspaper journalists to be engaged needs to be the ones invited in the Local awareness stakeholder's event. It should be noted that the budget set for this activity is not an advertisement fee, but an appreciation of the work done. Therefore, journalists friendly to the organizations (AFAAS/KRC) should be engaged.		
Coverage of the Biorefinery and Bio4Africa products in a local and national TV	At least 2 feature stories to be run one each in the National and local newspapers TV journalists to be engaged needs to be the ones invited in the Local awareness stakeholder's event. It should be noted that the budget set for this activity is not an advertisement fee, but an appreciation of the work done. Therefore, journalists friendly to the organizations (AFAAS/KRC) should be engaged.	Jan 2023	AFAAS/K RC
Demonstration of the Bio4Africa products during the National Trade Fair in Uganda	AFAAS/KRC will ensure that Bio4Africa products and processes are showcased during the National trade fair in Uganda. Efforts will be made to get space from the partners who have secured stands in the showground. The budget set aside for this activity may be used to contribute in the stands cost co-sharing and transportation of products/materials to the trade fair, etc.	June 2023	AFAAS/K RC

Presentation of the Bio4Africa in the Cooperatives, DFA and ACEs' AGMs	will be presented in their AGMS. The selected organizations should be	Jan - Dec 2023	AFAAS
Social media influencing	Youths engaged during the local stakeholders' engagement events will be engaged in social media influencing in YouTube, Facebook, Twitter, Instagram and TikTok. The budget set for this activity is not meant for advertisement but appreciation of the task executed well.	Jan - July 2023	AFAAS
	Total Budget for the assorted activities		
	GRAND TOTAL BUDGET		
	We target the grand total for the 1 st leg of the awareness campaign to cost 50% of the budget allocation for this activity. The remaining 50% will be consumed in the 2 nd leg of the campaign. The total budget set is for the activity is £4000.		

4.2 SENEGAL

Table 2: Local awareness campaign activity plan and budget for Senegal

Activity	Activity description and rationale	Date	Responsi ble
Organization of local Stakeholder	This is a one-day-stakeholders' event. Participants will be drawn from the districts close to Bio refinery so that, they can come early hours of the morning and return same day (No accommodation).	Feb 2023	UASZ
Engagement Event around	Costs include transport reimbursement and lunch for the participants.		
the pyrolysis	Description of the targeted participants:		
reactor	Category A: Crops and livestock value chains cooperatives leadership, Commodity Farmer Associations leaders, (for this category we can have 1 participant per grouping, i.e., Board chairperson or manager). Total pax = 10		
	Category B: Youth and women groups leadership, those who are engaged in the crops value chains. The number of participants should be 1 pax per group. Selected person should have capacity to cascade the awareness campaign to the rest of group. Total pax = 5		
	Category C: Local and national government personnel, including, Extension staff, relevant government departments. Total pax = 5		
	Category D: Strategic agrovets dealers, distributors of farm inputs Total pax = 5		
	Category E: Media personnel. Strategic personnel from the local and national newspapers, Radio and TV stations. Total pax = 3		
	Category F: Local and National social media influencers. We can have at most 1 participant each for Youtuber, Facebook, Twitter, TikTok,		

	Instagram influencers (each influencer should be commanding a significant influence in his/her relevant social media platform. Total pax = 5			
	Category G: Relevant NGOs & CSOs organization including, Faith Based Organizations, Affirmative action programs, financial service with farmer friendly financial products. Total pax 5.			
	Category H: Implementing agencies of the ongoing EU projects in Agriculture, food security, climate change, water and environment. Total pax = 5			
	Category I: Research and academia; Personnel from the relevant departments will be targeted. Total pax = 2			
	GRAND TOTAL PAX = 45			
local Stakeholder	This is a one-day-stakeholders' event. Participants will be drawn from the districts close to Fort Portal so that, they can come early hours of the morning and return same day (No accommodation).	Feb 2023	UASZ	
Engagement Event in Venue	Costs include transport reimbursement and lunch for the participants.			
2	Description of the targeted participants:			
	Category A: Crops and livestock value chains cooperatives leadership, Commodity Farmer Associations leaders, (for this category we can have 1 participant per grouping, i.e., Board chairperson or manager). Total pax = 10			
	Category B: Youth and women groups leadership, those who are engaged in the crops value chains. The number of participants should be 1 pax per group. Selected person should have capacity to cascade the awareness campaign to the rest of group. Total pax = 5			
	Category C: Local and national government personnel, including, Extension staff, relevant government departments. Total pax = 5			
	Category D: Strategic agrovets dealers, distributors of farm inputs Total pax = 5			
	Category E: Media personnel. Strategic personnel from the local and national newspapers, Radio and TV stations. Total pax = 3			
	Category F: Local and National social media influencers. We can have at most 1 participant each for Youtuber, Facebook, Twitter, TikTok, Instagram influencers (each influencer should be commanding a significant influence in his/her relevant social media platform. Total pax = 5			
	Category G: Relevant NGOs & CSOs organization including, Faith Based Organizations, Affirmative action programs, financial service with farmer friendly financial products. Total pax 5.			
	Category H: Implementing agencies of the ongoing EU projects in Agriculture, food security, climate change, water and environment. Total pax = 5			
	Category I: Research and academia; Personnel from the relevant departments will be targeted. Total pax = 2 GRAND TOTAL PAX = 45			
Organization of local Stakeholder	This is a one-day-stakeholders' event. Participants will be drawn from the districts close to Fort Portal so that, they can come early hours of the morning and return same day (No accommodation).	Feb 2023	UASZ	
		_		

Engagement	Costs include transport reimbursement and lunch for the participants.		
Event in Venue			
3.	Description of the targeted participants:		
	Category A: Crops and livestock value chains cooperatives leadership, Commodity Farmer Associations leaders, (for this category we can have 1 participant per grouping, i.e., Board chairperson or manager). Total pax = 10		
	Category B: Youth and women groups leadership, those who are engaged in the crops value chains. The number of participants should be 1 pax per group. Selected person should have capacity to cascade the awareness campaign to the rest of group. Total pax = 5		
	Category C: Local and national government personnel, including, Extension staff, relevant government departments. Total pax = 5		
	Category D: Strategic agrovets dealers, distributors of farm inputs Total pax = 5		
	Category E: Media personnel. Strategic personnel from the local and national newspapers, Radio and TV stations. Total pax = 3		
	Category F: Local and National social media influencers. We can have at most 1 participant each for Youtuber, Facebook, Twitter, TikTok, Instagram influencers (each influencer should be commanding a significant influence in his/her relevant social media platform. Total pax = 5		
	Category G: Relevant NGOs & CSOs organization including, Faith Based Organizations, Affirmative action programs, financial service with farmer friendly financial products. Total pax 5.		
	Category H: Implementing agencies of the ongoing EU projects in Agriculture, food security, climate change, water and environment. Total pax = 5		
	Category I: Research and academia; Personnel from the relevant departments will be targeted. Total pax = 2 GRAND TOTAL PAX = 45		
	Total budget for the 3 events		
Local Radio presentation on Bio4Africa products in	Local Radio station will be used. At least 3 programs with significant audience will be secured. Radio journalists to be engaged needs to be the ones invited in the Local awareness stakeholder's event.	Feb 2023	UASZ
Senegal	It should be noted that the budget set for this activity is not an advertisement fee, but an appreciation of the work done. Therefore, journalists friendly to the organizations (AFAAS/KRC) should be engaged.		
National and Local	2 articles will be published each in the national newspaper and local newspapers.	Feb 2023	UASZ
newspapers articles on Bio4Africa products in Senegal are published	Newspaper journalists to be engaged needs to be the ones invited in the Local awareness stakeholder's event. It should be noted that the budget set for this activity is not an advertisement fee, but an appreciation of the work done. Therefore, journalists friendly to the UASZ should be engaged.		
Coverage of the Biorefinery and	At least 2 feature stories to be run one each in the National and local newspapers	Feb 2023	UASZ

TV journalists to be engaged needs to be the ones invited in the Local awareness stakeholder's event. It should be noted that the budget set for this activity is not an advertisement fee, but an appreciation of the work done. Therefore, journalists friendly to the UASZ should be engaged.		
UASZ will ensure that Bio4Africa products and processes are showcased during the National trade fair in Uganda. Efforts will be made to get space from the partners who have secured stands in the showground. The budget set aside for this activity may be used to contribute in the stands cost co-sharing and transportation of products/materials to the trade fair, etc.	June 2023	UASZ
Strategic cooperatives will be selected where Bio4Africa will be presented in their AGMS. The selected organizations should be the ones in the relevant value chains such as crop and livestock etc. At least 4 AGMs should be attended. The cost for this purpose should be the presenter's transport cost and lunch.	Feb - Dec 2023	UASZ
Youths engaged during the local stakeholders' engagement events will be engaged in social media influencing in YouTube, Facebook, Twitter, Instagram and TikTok. The budget set for this activity is not meant for advertisement but appreciation of the task executed well.	Jan - July 2023	UASZ
Total Budget for the assorted activities		
GRAND TOTAL BUDGET		
We target the grand total for the 1 st leg of the awareness campaign to cost 50% of the budget allocation for this activity. The remaining 50% will be consumed in the 2 nd leg of the campaign. The total budget set is for the activity is £4000.		
	awareness stakeholder's event. It should be noted that the budget set for this activity is not an advertisement fee, but an appreciation of the work done. Therefore, journalists friendly to the UASZ should be engaged. UASZ will ensure that Bio4Africa products and processes are showcased during the National trade fair in Uganda. Efforts will be made to get space from the partners who have secured stands in the showground. The budget set aside for this activity may be used to contribute in the stands cost co-sharing and transportation of products/materials to the trade fair, etc. Strategic cooperatives will be selected where Bio4Africa will be presented in their AGMS. The selected organizations should be the ones in the relevant value chains such as crop and livestock etc. At least 4 AGMs should be attended. The cost for this purpose should be the presenter's transport cost and lunch. Youths engaged during the local stakeholders' engagement events will be engaged in social media influencing in YouTube, Facebook, Twitter, Instagram and TikTok. The budget set for this activity is not meant for advertisement but appreciation of the task executed well. Total Budget for the assorted activities GRAND TOTAL BUDGET We target the grand total for the 1st leg of the awareness campaign to cost 50% of the budget allocation for this activity. The remaining 50%	awareness stakeholder's event. It should be noted that the budget set for this activity is not an advertisement fee, but an appreciation of the work done. Therefore, journalists friendly to the UASZ should be engaged. UASZ will ensure that Bio4Africa products and processes are showcased during the National trade fair in Uganda. Efforts will be made to get space from the partners who have secured stands in the showground. The budget set aside for this activity may be used to contribute in the stands cost co-sharing and transportation of products/materials to the trade fair, etc. Strategic cooperatives will be selected where Bio4Africa will be presented in their AGMS. The selected organizations should be the ones in the relevant value chains such as crop and livestock etc. At least 4 AGMs should be attended. The cost for this purpose should be the presenter's transport cost and lunch. Youths engaged during the local stakeholders' engagement events will be engaged in social media influencing in YouTube, Facebook, Twitter, Instagram and TikTok. The budget set for this activity is not meant for advertisement but appreciation of the task executed well. Total Budget for the assorted activities GRAND TOTAL BUDGET We target the grand total for the 1st leg of the awareness campaign to cost 50% of the budget allocation for this activity. The remaining 50% will be consumed in the 2nd leg of the campaign.

4.3 COTE D'IVORE

Table 3: Local awareness campaign activity plan and budget for Code d'Ivore

Activity	Activity description and rationale	Date	Respons ible
Organization of local Stakeholder Engagement Event close to the pilot locality	This is a one-day-stakeholders' event. Participants will be drawn from the districts close to Fort Portal so that, they can come early hours of the morning and return same day (No accommodation). Costs include transport reimbursement and lunch for the participants. Description of the targeted participants: Category A: Beef, poultry, crops value chains cooperatives leadership,	March 2023	INP-HB
	Commodity Associations leaders, primary Cooperative Enterprises leaders (for this category we can have 1 participant per grouping, i.e., Board chairperson or manager). Total pax = 10		

	Category B: Youth and women groups leadership, those who are engaged in the beef, poultry, crops value chains. The number of participants should be 1 pax per group. Selected person should have capacity to cascade the awareness campaign to the rest of group. Total pax = 5 Category C: Local and national government personnel, including, Extension staff, relevant government departments. Total pax = 5 Category D: Strategic agrovets dealers, distributors of animal feeds, strategic animal feed processors. Total pax = 5 Category E: Media personnel. Strategic personnel from the local and national newspapers, Radio and TV stations. Total pax = 3 Category F: Local and National social media influencers. We can have at most 1 participant each for Youtuber, Facebook, Twitter, TikTok, Instagram influencers (each influencer should be commanding a significant influence in his/her relevant social media platform. Total pax = 5 Category G: Relevant NGOs & CSOs organization including, Faith Based Organizations, Affirmative action programs, financial service with		
	farmer friendly financial products. Total pax 5. Category H: Implementing agencies of the ongoing EU projects in Agriculture, food security, climate change, water and environment. Total pax = 5 Category I: Research and academia; Personnel from the relevant departments will be targeted. Total pax = 2		
	GRAND TOTAL PAX = 45		
Organization of local Stakeholder Engagement	This is a one-day-stakeholders' event. Participants will be drawn from the districts close to Fort Portal so that, they can come early hours of the morning and return same day (No accommodation).	Jan 2023	INP-HB
Event in Venue	Costs include transport reimbursement and lunch for the participants.		
2	Description of the targeted participants:		
	Category A: Dairy, beef, poultry, piggery, crops value chains cooperatives leadership, District Farmer Associations leaders, Area Cooperative Enterprises leaders (for this category we can have 1 participant per grouping, i.e., Board chairperson or manager). Total pax = 10		
	Category B: Youth and women groups leadership, those who are engaged in the dairy, beef, poultry, piggery, crops value chains. The number of participants should be 1 pax per group. Selected person should have capacity to cascade the awareness campaign to the rest of group. Total pax = 5		
	Category C: Local and national government personnel, including, Extension staff, relevant government departments. Total pax = 5		
	Category D: Strategic agrovets dealers, distributors of animal feeds, strategic animal feed processors. Total pax = 5		
	Category E: Media personnel. Strategic personnel from the local and national newspapers, Radio and TV stations. Total pax = 3		

	Category F: Local and National social media influencers. We can have at most 1 participant each for Youtuber, Facebook, Twitter, TikTok, Instagram influencers (each influencer should be commanding a significant influence in his/her relevant social media platform. Total pax = 5		
	Category G: Relevant NGOs & CSOs organization including, Faith Based Organizations, Affirmative action programs, financial service with farmer friendly financial products. Total pax 5.		
	Category H: Implementing agencies of the ongoing EU projects in Agriculture, food security, climate change, water and environment. Total pax = 5		
	Category I: Research and academia; Personnel from the relevant departments will be targeted. Total pax = 2 GRAND TOTAL PAX = 45		
local Stakeholder	This is a one-day-stakeholders' event. Participants will be drawn from the districts close to Fort Portal so that, they can come early hours of the morning and return same day (No accommodation).	Jan 2023	INP-HB
Engagement Event in Venue	Costs include transport reimbursement and lunch for the participants.		
3	Description of the targeted participants:		
	Category A: Livestock crops value chains cooperatives leadership, District Farmer Associations leaders, Area Cooperative Enterprises leaders (for this category we can have 1 participant per grouping, i.e., Board chairperson or manager). Total pax = 10		
	Category B: Youth and women groups leadership, those who are engaged in the beef, poultry, crops value chains. The number of participants should be 1 pax per group. Selected person should have capacity to cascade the awareness campaign to the rest of group. Total pax = 5		
	Category C: Local and national government personnel, including, Extension staff, relevant government departments. Total pax = 5		
	Category D: Strategic agrovets dealers, distributors of animal feeds, strategic animal feed processors. Total pax = 5		
	Category E: Media personnel. Strategic personnel from the local and national newspapers, Radio and TV stations. Total pax = 3		
	Category F: Local and National social media influencers. We can have at most 1 participant each for Youtuber, Facebook, Twitter, TikTok, Instagram influencers (each influencer should be commanding a significant influence in his/her relevant social media platform. Total pax = 5		
	Category G: Relevant NGOs & CSOs organization including, Faith Based Organizations, Affirmative action programs, financial service with farmer friendly financial products. Total pax 5.		
	Category H: Implementing agencies of the ongoing EU projects in Agriculture, food security, climate change, water and environment. Total pax = 5		
	Category I: Research and academia; Personnel from the relevant departments will be targeted. Total pax = 2 GRAND TOTAL PAX = 45		

	Total budget for the 3 events		
Local Radio presentation on Bio4Africa products in Cote d'Ivore	Local Radio station will be used. At least 3 programs with significant audience will be secured. Radio journalists to be engaged needs to be the ones invited in the Local awareness stakeholder's event. It should be noted that the budget set for this activity is not an advertisement fee, but an appreciation of the work done. Therefore, journalists friendly to the INP-HB should be engaged.	March 2023	INP-HB
National and Local newspapers articles on Bio4Africa products in Cote d'Ivore are published	2 articles will be published each in the national newspaper and local newspapers. Newspaper journalists to be engaged needs to be the ones invited in the Local awareness stakeholder's event. It should be noted that the budget set for this activity is not an advertisement fee, but an appreciation of the work done. Therefore, journalists friendly to the INP-HB should be engaged.	March 2023	INP-HB
Coverage of the Biorefinery and Bio4Africa products in a local and national TV	At least 2 feature stories to be run one each in the National and local newspapers TV journalists to be engaged needs to be the ones invited in the Local awareness stakeholder's event. It should be noted that the budget set for this activity is not an advertisement fee, but an appreciation of the work done. Therefore, journalists friendly to the INP-HB should be engaged.	March 2023	INP-HB
Demonstration of the Bio4Africa products during the National Trade Fair in Cote d'Ivore	INP-HB will ensure that Bio4Africa products and processes are showcased during the National trade fair in Uganda. Efforts will be made to get space from the partners who have secured stands in the showground. The budget set aside for this activity may be used to contribute in the stands cost co-sharing and transportation of products/materials to the trade fair, etc.	June 2023	INP-HB
	Strategic cooperatives and commodity associations will be selected where Bio4Africa will be presented in their AGMS. The selected organizations should be the ones in the relevant value chains such as dairy, poultry, etc. At least 4 AGMs should be attended. The cost for this purpose should be the presenter's transport cost and lunch.	March -Dec 2023	INP-HB
Social media influencing	Youths engaged during the local stakeholders' engagement events will be engaged in social media influencing in YouTube, Facebook, Twitter, Instagram and TikTok. The budget set for this activity is not meant for advertisement but appreciation of the task executed well.	Jan - July 2023	INP-HB
	Total Budget for the assorted activities		
	GRAND TOTAL BUDGET		
	We target the grand total for the 1^{st} leg of the awareness campaign to cost 50% of the budget allocation for this activity. The remaining 50% will be consumed in the 2^{nd} leg of the campaign.		
	The total budget set is for the activity is £4000.		

4.4 GHANA

Table 4: Local awareness campaign activity plan and budget for Ghana

	Table 4: Local awareness campaign activity plan and budget for Ghana			
Activity	Activity description and rationale	Date	Responsi ble	
Organization of local Stakeholder	This is a one-day-stakeholders' event. Participants will be drawn from the districts close to Fort Portal so that, they can come early hours of the morning and return same day (No accommodation).	April 2023	SAVANET	
Engagement Event close to	Costs include transport reimbursement and lunch for the participants.			
the bio-refinery	Description of the targeted participants:			
	Category A: Dairy, beef, poultry, piggery, crops value chains cooperatives leadership, District Farmer Associations leaders, Area Cooperative Enterprises leaders (for this category we can have 1 participant per grouping, i.e., Board chairperson or manager). Total pax = 10			
	Category B: Youth and women groups leadership, those who are engaged in the dairy, beef, poultry, piggery, crops value chains. The number of participants should be 1 pax per group. Selected person should have capacity to cascade the awareness campaign to the rest of group. Total pax = 5			
	Category C: Local and national government personnel, including, Extension staff, relevant government departments. Total pax = 5			
	Category D: Strategic agrovets dealers, distributors of animal feeds, strategic animal feed processors. Total pax = 5			
	Category E: Media personnel. Strategic personnel from the local and national newspapers, Radio and TV stations. Total pax = 3			
	Category F: Local and National social media influencers. We can have at most 1 participant each for Youtuber, Facebook, Twitter, TikTok, Instagram influencers (each influencer should be commanding a significant influence in his/her relevant social media platform. Total pax = 5			
	Category G: Relevant NGOs & CSOs organization including, Faith Based Organizations, Affirmative action programs, financial service with farmer friendly financial products. Total pax 5.			
	Category H: Implementing agencies of the ongoing EU projects in Agriculture, food security, climate change, water and environment. Total pax = 5			
	Category I: Research and academia; Personnel from the relevant departments will be targeted. Total pax = 2			
	GRAND TOTAL PAX = 45			
local Stakeholder	This is a one-day-stakeholders' event. Participants will be drawn from the districts close to Fort Portal so that, they can come early hours of the morning and return same day (No accommodation).	April 2023	SAVANET	
Engagement Event in Venue	Costs include transport reimbursement and lunch for the participants.			
2	Description of the targeted participants:			
	Category A: Dairy, beef, poultry, piggery, crops value chains cooperatives leadership, District Farmer Associations leaders, Area			

	Cooperative Enterprises leaders (for this category we can have 1 participant per grouping, i.e., Board chairperson or manager).		
	Total pax = 10		
	Category B: Youth and women groups leadership, those who are engaged in the dairy, beef, poultry, piggery, crops value chains. The number of participants should be 1 pax per group. Selected person should have capacity to cascade the awareness campaign to the rest of group. Total pax = 5		
	Category C: Local and national government personnel, including, Extension staff, relevant government departments. Total pax = 5		
	Category D: Strategic agrovets dealers, distributors of animal feeds, strategic animal feed processors. Total pax = 5		
	Category E: Media personnel. Strategic personnel from the local and national newspapers, Radio and TV stations. Total pax = 3		
	Category F: Local and National social media influencers. We can have at most 1 participant each for Youtuber, Facebook, Twitter, TikTok, Instagram influencers (each influencer should be commanding a significant influence in his/her relevant social media platform. Total pax = 5		
	Category G: Relevant NGOs & CSOs organization including, Faith Based Organizations, Affirmative action programs, financial service with farmer friendly financial products. Total pax 5.		
	Category H: Implementing agencies of the ongoing EU projects in Agriculture, food security, climate change, water and environment. Total pax = 5		
	Category I: Research and academia; Personnel from the relevant departments will be targeted. Total pax = 2 GRAND TOTAL PAX = 45		
Organization of local Stakeholder	This is a one-day-stakeholders' event. Participants will be drawn from the districts close to Fort Portal so that, they can come early hours of the morning and return same day (No accommodation).	April 2023	SAVANET
Engagement Event in	Costs include transport reimbursement and lunch for the participants.		
Kampala	Description of the targeted participants:		
	Category A: Dairy, beef, poultry, piggery, crops value chains cooperatives leadership, District Farmer Associations leaders, Area Cooperative Enterprises leaders (for this category we can have 1 participant per grouping, i.e., Board chairperson or manager). Total pax = 10		
	Category B: Youth and women groups leadership, those who are engaged in the dairy, beef, poultry, piggery, crops value chains. The number of participants should be 1 pax per group. Selected person should have capacity to cascade the awareness campaign to the rest of group. Total pax = 5		
	Category C: Local and national government personnel, including, Extension staff, relevant government departments. Total pax = 5		
	Category D: Strategic agrovets dealers, distributors of animal feeds, strategic animal feed processors. Total pax = 5		

	Category E: Media personnel. Strategic personnel from the local and national newspapers, Radio and TV stations. Total pax = 3 Category F: Local and National social media influencers. We can have at most 1 participant each for Youtuber, Facebook, Twitter, TikTok, Instagram influencers (each influencer should be commanding a significant influence in his/her relevant social media platform. Total pax = 5 Category G: Relevant NGOs & CSOs organization including, Faith Based Organizations, Affirmative action programs, financial service with farmer friendly financial products. Total pax 5. Category H: Implementing agencies of the ongoing EU projects in Agriculture, food security, climate change, water and environment. Total pax = 5 Category I: Research and academia; Personnel from the relevant departments will be targeted. Total pax = 2		
	GRAND TOTAL PAX = 45		
	Total budget for the 3 events		
Local Radio presentation on Bio4Africa products in Venue 3	Local Radio station will be used. At least 3 programs with significant audience will be secured. Radio journalists to be engaged needs to be the ones invited in the Local awareness stakeholder's event. It should be noted that the budget set for this activity is not an advertisement fee, but an appreciation of the work done. Therefore, journalists friendly to AVANET should be engaged.	April 2023	SAVANET
National and Local	2 articles will be published each in the national newspaper and local newspapers.	April 2023	SAVANET
newspapers articles on Bio4Africa products in Uganda are	Newspaper journalists to be engaged needs to be the ones invited in the Local awareness stakeholder's event. It should be noted that the budget set for this activity is not an advertisement fee, but an appreciation of the work done. Therefore, journalists friendly to SAVANET should be engaged.		
Coverage of the Biorefinery and Bio4Africa products in a local and national TV	At least 2 feature stories to be run one each in the National and local newspapers TV journalists to be engaged needs to be the ones invited in the Local awareness stakeholder's event. It should be noted that the budget set for this activity is not an advertisement fee, but an appreciation of the work done. Therefore, journalists friendly to SAVANET should be engaged.	April 2023	SAVANET
Demonstration of the Bio4Africa products during the National Trade Fair in Uganda	SAVANET will ensure that Bio4Africa products and processes are showcased during the National trade fair in Uganda. Efforts will be made to get space from the partners who have secured stands in the showground. The budget set aside for this activity may be used to contribute in the stands cost co-sharing and transportation of products/materials to the trade fair, etc.	April 2023	SAVANET
Presentation of the Bio4Africa in the Cooperatives, DFA and ACEs' AGMs	Strategic cooperatives and commodity associations will be selected where Bio4Africa will be presented in their AGMS. The selected organizations should be the ones in the relevant value chains such as dairy, poultry, piggery, etc. At least 4 AGMs should be attended. The cost for this purpose should be the presenter's transport cost and lunch.	Jan - Dec 2023	SAVANET

Social media influencing	Youths engaged during the local stakeholders' engagement events will be engaged in social media influencing in YouTube, Facebook, Twitter, Instagram and TikTok. The budget set for this activity is not meant for advertisement but appreciation of the task executed well.	Jan - July 2023	SAVANET
	Total Budget for the assorted activities		
	GRAND TOTAL BUDGET		
	We target the grand total for the 1 st leg of the awareness campaign to cost 50% of the budget allocation for this activity. The remaining 50% will be consumed in the 2 nd leg of the campaign. The total budget set is for the activity is £4000.		

5. Local Stakeholder Engagement Events' preparation tasks

Table 5: Local Stakeholder Engagement Events' preparation tasks

Tasks to be carried out in preparation for the Local Stakeholder Engagement Events preparation tasks

Activity	Date	Responsible			
Development of the concept notes and invitation letters for the participants for the local Stakeholder Engagement Events	Dec 2022 – Jan 2023	AFAAS/UASZ/INP- HB/SAVANET			
Identification and generation of the participants for the local Stakeholder Engagement Events	Dec 2022 – Jan 2023	AFAAS/UASZ/INP- HB/SAVANET			
Development of presentations for the local Stakeholder Engagement Events	Dec 2022 – Jan 2023	AFAAS/UASZ/INP- HB/SAVANET			
Review of the presentation developed by the local partners for the local Stakeholder Engagement Events	Jan 2023	EAFF			
Sending invitation letters to the approved participants for the local Stakeholder Engagement Events	Dec 2023	AFAAS			
Sending invitation letters to the approved participants	Jan 2023	UASZ/INP- HB/SAVANET			
Development of the survey tool (questionnaire) for the evaluation of the participants/organizations before and after carrying out local awareness raising campaigns	Jan 2023	EAFF			
Determination of a digital survey tool for data collection on participants/organizations before and after carrying out local awareness raising campaigns	Jan 2023	EAFF			

6. References

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