D4.1. Appendix No 5
Cluster of bio-based solutions
classified as “hygiene products” (WP4, T4.2.1)

Disclaimer:

Scope: The appendix presents all the scoped solutions that were classified as “hygiene products”. The information on individual solutions are presented in the form of the filled – up templates. Before presenting an individual solution, information is given on the Bio4HUMAN partner responsible for scoping the given solution, as well as on the Investigation Line of T.4.2.1., the solution results from. There is also information on the presence / lack of presence of the solution on the final List of 27 bio-based products and technologies.

Note: The templates were filled up by the Leaders of Investigation Line based on the gathered information. Empty spaces in the templates mean *“no information available on the given criterion”* or *“difficulty in assessing the utility functions of the given solution”*. The second reason was quite common in relation to the potential application of the given solution to the different supply chain stages of humanitarian interventions. The filled up templates were provided to PRO CIVIS for further initial analysis. At the stage of internal consultation – all the Bio4HUMAN partners were granted access to the presentation of the solutions and were asked to provide comments and opinions on the subject of the potential applicability and functionality of the solution in the context of solid waste management in the humanitarian interventions.

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The appendix No 5 includes presentation of the following 4 bio-based solutions:

1. Anandi Eco+ – 100% Compostable Sanitary Pads + Aakar Mini – Factories 2
2. NATY Incontinence Pads 8
3. Plant-based absorbent article 10
4. NATY Compostable Wipes 14

1. Anandi Eco+ – 100% Compostable Sanitary Pads + Aakar Mini – Factories

Responsible partner: PRO CIVIS
INVESTIGATION LINE: IV

Solution 1 on the final List	**Anandi Eco+ – 100% Compostable Sanitary Pads + Aakar Mini –Factories**
Product / service	**X**
Technology	**-**

I. Basic information

Description of functions

Anandi Eco+ is the certified 100 % compostable sanitary pad. In a compost environment, at least 90% of the pad are biodegraded within 180 days. Under other conditions in nature, it takes longer respectively. The pads can be disposed easily in the backyard mud pit of any rural household to avoid polluting the environment and create bio-manure for agriculture.

Anandi Eco+ pads do not use any harmful chemicals and convert into manure post disposal, which can be further utilised. This way, the pads contribute to environmental protection and increased resource reuse.

Moreover **Aakar Innovations (India), the Producer,** provides commercially viable solutions for production, distribution, marketing & sales of affordable and environmentally friendly sanitary pads, produced by local entrepreneurs, in areas where these products would otherwise not have been available. **Aakar Innovations** also uses local resources like jute, bagasse, banana fibre and water hyacinth to produce their sanitary pads to reduce cost and utilizes agricultural plant waste materials.

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Each **Anandi pad** is manufactured in a 'woman supervised' and 'woman employed' **mini factory**. This provides an opportunity for local women to become employed, learn entrepreneurial and marketing skills, and even assume management roles within their own community. The components in the mini factory run on simple technology, yet produce sanitary napkins as comfortable and effective as competitive products. This is the result of extensive R&D, both in technology and raw materials. The novelty of this technology lies in integration of well-known equipment and processes with Company's own technological advancements. This dramatically cuts down production costs without compromising quality.

The Anandi production unit model is considered **a superior mini factory in the cottage industry**.

Description of technology and TRL level (if applicable)

TRL 9

Description of product/service and TRL level (if applicable)

TRL 9

Basic conditions of use

Please include also minimum requirements of a given solution regarding the availability of public infrastructure.

In the process of finding out.

Please include the optimal scale/size of investment at which their solution or technology makes economic sense.

In the process of finding out.

What kind of waste the solution is able to utilize or valorise?

The solution provides for the reduction of sanitary / hygienic waste.

To what extent does the use of a given solution or technology depend on climatic conditions?

In the process of finding out.

Is it possible to refine the solution as an autonomous and mobile unit? (if applicable)

In the process of finding out.

Solution owner and his willingness to provide detailed technical and technological data

Aakar Innovations Pvt. Ltd., 1007, Mayuresh Square, Sector 15, CBD Belapur, Navi Mumbai – 400614.

The Solution Owner willing to participate in the Project.

Has the Life Cycle Analysis been already done for this solution?

In the process of finding out.

Each mini factory is easy to operate and maintain. With basic training, women can produce superior quality Anandi pads and eventually manage their own factories. Additionally, the mini-factories require minimal electricity to operate and has a built in quality standard.

Further potentially useful information:

- each mini factory is run by proprietary customised machinery by Aakar Innovations;
- the material used for the Anandi pads is derived from locally available agricultural and plant waste;
- operating for 8-10 hours per day, one mini factory can provide a hygienic menstrual management option for 200,000+ women each month.

Source of data

1) The finalist of the innovation award 'Bio-based Material of the Year 2019'

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https://www.agro-chemistry.com/news/six-candidates-for-bio-based-material-of-the-year-2019/

2) The web page of the Company: https://www.aakarinnovations.com
3) The web page of the Product: www.anandilife.com
4) Contact over the mails:
   info@aakarinnovations.com ;
   sales@aakarinnovations.com ;
   care@anandilife.com ;

References

Please include a description and a photo of any examples of the implementation.

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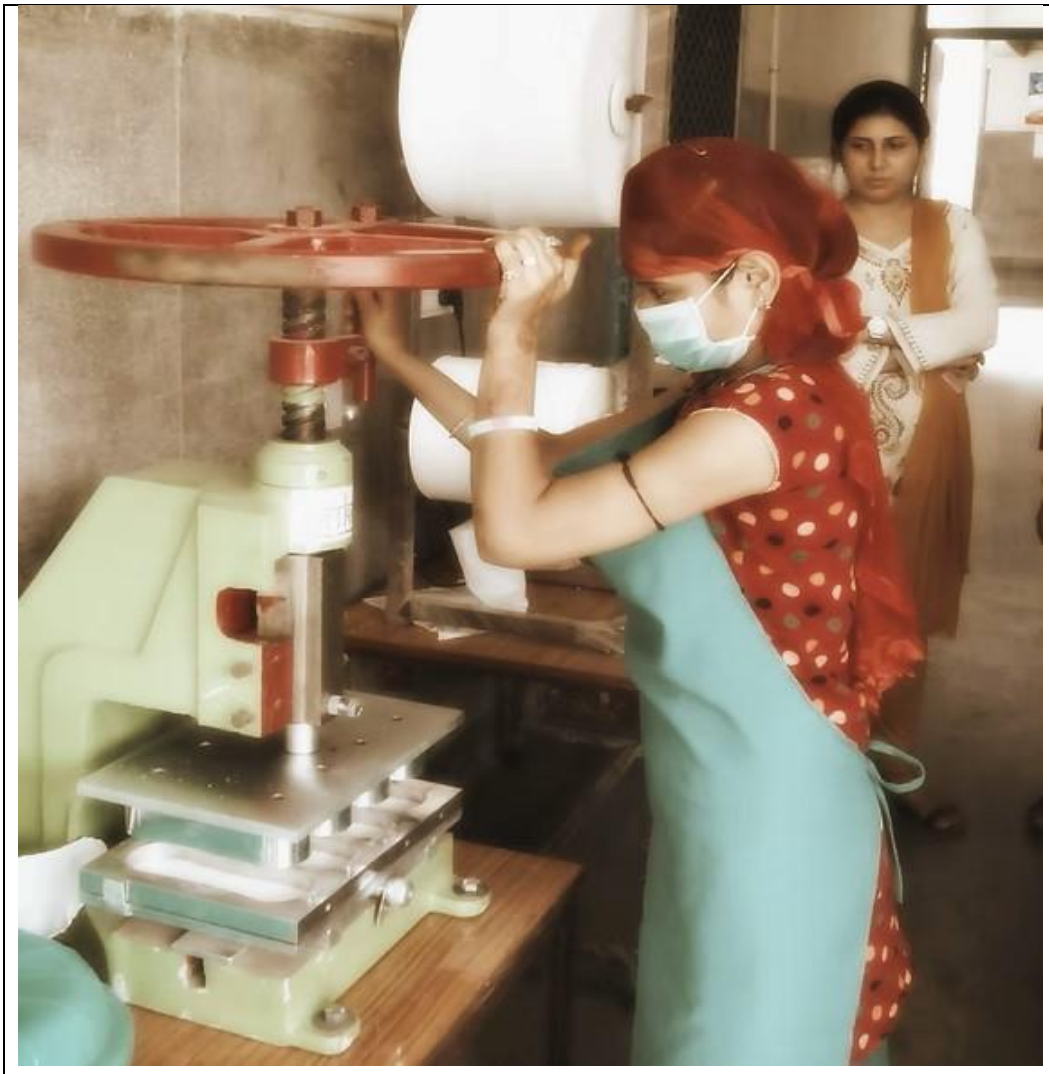

Source: *the web page of Aakar Innovations*

II. End-of-life stage addressed by the solution

Please describe if the solution refers to 4R Principle (Reduce, reuse, recycle, recover) biodegradability, composability or other means of end-of-life stage.

Reduction of sanitary / hygienic waste.

Potential recovery as the bio-manure for agriculture.

III. Needs of the humanitarian sector and / or of the solid waste management constraints in the humanitarian settings addressed by identified solution

We are looking for:
***1) bio - based products / services** in order to diminish the amounts of waste generated by humanitarian interventions*
***2) bio - based technologies** in order to cope with the amounts of waste generated in the humanitarian context.*

The expected characteristics of the bio-based solutions potentially applicable in the humanitarian context:

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· *ability to eliminate the humanitarian waste, i.e. plastic, aluminium, metal, glass, paper & cardboard, organic, wood, medical and chemical;*
· *sustainability – addressing environmental, economic, and social factors; be adaptable to local conditions; provide long-term benefits without unintended negative consequences;*
· *utilization of local resources and knowledge.*

In case of a doubt as for the applicability of a given product, service or technology in the humanitarian context – please consult the Humanitarian Assessment Report prepared by People In Need and Polish Humanitarian Action. The Report is enclosed; also available in the SharePoint.

Please describe below how the solutions addresses the needs.

Anandi pads are compostable due to the fact that they are capable of disintegrating into natural elements in a compost environment. This usually occurs within 90-180 days depending on varying environmental factors. The Anandi pad is disposed off by burying it in a pit and waiting for the compounds to decompose naturally. Due to the natural raw materials used to make the pad, this process is safe, easy and quick. Additionally, the materials used to produce the **Anandi pad** ensure that no toxicity is left in the soil.

In many regions of the world the most common method of disposal of sanitary napkins is incineration. This process releases harmful dioxins and methane gas into the air, which lead to environmental damage and creates unfit living conditions. Compostable sanitary napkins such as Anandi, provide users with a safe alternative which is environmentally sustainable.

IV. Logistic supply chains application potential - in which stage?

The 'humanitarian supply chain' *is defined as: "The planning, procurement, storage, transport and delivery of different forms of supplies, works & services used for projects and to respond to emergencies. This includes the flow of supplies from origin to destination but also more complex work of forecasting, optimising resources, value for money to ensure the most efficient process, and decreasing the carbon footprint of related operations"*

Type of waste in humanitarian context:

COMMODITY TYPE	***PACKAGING***
Grains, cereals	*Virgin woven PP bags*
Cornmeal, fortified flour	*Hybrid paper bags and PP woven bags with PE*
Fortified vegetable oil	*Steel cans, plastic bottles, cardboard cartons*
Specialised nutritious food products	*Metallised flexible plastic sachets and pouches, plastic box liners, cardboard cartons*
TYPICAL NON-FOOD ITEMS	
Tents, shelter kits, tarpaulin, synthetic sleeping mats, blankets, clothes, mosquito nets, timber, cement.	
Nutrition-specialized products, such as Ready-to-Use Therapeutic Food (RUTF) and Ready-to-Use Supplementary Foods (RUSF); for example, Plumpy'Nut, vitamin A supplements, iron-folic acid supplements, and micronutrient supplements. These can be on tinplate or laminated packaging structures.	
Medical supplies, wheelchairs, cold boxes.	
Jerrycans/buckets (water containers), water purification tablets (Aquatabs, PUR), Water pumps, hygiene products (soap), menstrual hygiene products (single-use pads, reusable pads-ex. AFRIpads), water testing products, chemicals (such as chlorine), and equipment (for pump mechanics).	
Stoves (fuel-efficient saving stoves), seeds, farming tools (hoes, axes, rakes, watering cans, buckets), storage (bags and sacks), fertilizers, pesticides, etc.	
Paper, printed products, office equipment, electronic waste, etc.	
Petroleum, oil, and lubricants. Electrical transformers with polychlorinated biphenyls (PCBs). Chemicals such as acid, chlorine, and pesticides. Asbestos-containing materials. Treated timber, etc.	

Please indicate the link of the supply chain for which the solution can be applied? Describe how.

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Identification of needs
……
Conceptualization and planning
……
Procurement – sourcing/ purchasing of products and services
……
Goods collection in warehouses and repacking for transport to final destination
……
Custom clearance
……
Transport to the destination country (often multi-stage and using different modes of transport)
……
Transport to the final destinations – last mile
……
Storage at the final destination
……
Operational logistic at final destination - distribution of goods and services
Potential application.

2. NATY Incontinence Pads

Responsible partner: IBF
INVESTIGATION LINE: III

Solution 2 **on the final List**	**NATY Incontinence Pads**
Product / service	*X*
Technology	*Please mark X if relevant*
I. Basic information	
Description of functions *What is the effect or final product?* Incontinence Pad that is compostable. Health and sanitation product.	
Description of technology and TRL level (if applicable) ……	
Description of product/service and TRL level (if applicable) Eco by Naty is the first Femcare/Inco line with only compostable certified raw materials, including the individual wrapping and packaging.	
Basic conditions of use *Please include also minimum requirements of a given solution regarding the availability of public infrastructure.* *Please include the optimal scale/size of investment at which their solution or technology makes economic sense* *What kind of waste the solution is able to utilize or valorise?* *To what extent does the use of a given solution or technology depend on climatic conditions?* *Is it possible to refine the solution as an autonomous and mobile unit? (if applicable)*	

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.....

Solution owner and his willingness to provide detailed technical and technological data

NATY, contacted, but no response.

Has the Life Cycle Analysis been already done for this solution?

Don't know

Source of data

https://www.naty.com/us/en/for-women/incontinence-pads/incontinence-pads/8889.html, **press@naty.com**

References

Please include a description and a photo of any examples of the implementation.

II. End-of-life stage addressed by the solution

Please describe if the solution refers to 4R Principle (Reduce, reuse, recycle, recover) biodegradability, composability or other means of end-of-life stage.

Compostable and from plant based materials

III. Needs of the humanitarian sector and / or of the solid waste management constraints in the humanitarian settings addressed by identified solution

We are looking for:
***1) bio - based products / services** in order to diminish the amounts of waste generated by humanitarian interventions*
***2) bio - based technologies** in order to cope with the amounts of waste generated in the humanitarian context.*

The expected characteristics of the bio-based solutions potentially applicable in the humanitarian context:
· ability to eliminate the humanitarian waste, i.e. plastic, aluminium, metal, glass, paper & cardboard, organic, wood, medical and chemical;
· sustainability – addressing environmental, economic, and social factors; be adaptable to local conditions; provide long-term benefits without unintended negative consequences;
· utilization of local resources and knowledge.

In case of a doubt as for the applicability of a given product, service or technology in the humanitarian context – please consult the Humanitarian Assessment Report prepared by People In Need and Polish Humanitarian Action. The Report is enclosed; also available in the SharePoint.

Please describe below how the solutions addresses the needs.

Compostable and from plant-based materials.

IV. Logistic supply chains application potential - in which stage?

***The 'humanitarian supply chain'** is defined as: "The planning, procurement, storage, transport and delivery of different forms of supplies, works & services used for projects and to respond to emergencies. This includes the flow of supplies from origin to destination but also more complex work of forecasting, optimising resources, value for money to ensure the most efficient process, and decreasing the carbon footprint of related operations"*

Type of waste in humanitarian context:

COMMODITY TYPE	***PACKAGING***
Grains, cereals	*Virgin woven PP bags*
Cornmeal, fortified flour	*Hybrid paper bags and PP woven bags with PE*
Fortified vegetable oil	*Steel cans, plastic bottles, cardboard cartons*
Specialised nutritious food products	*Metallised flexible plastic sachets and pouches, plastic box liners, cardboard cartons*
TYPICAL NON-FOOD ITEMS	
Tents, shelter kits, tarpaulin, synthetic sleeping mats, blankets, clothes, mosquito nets, timber, cement.	

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Nutrition-specialized products, such as Ready-to-Use Therapeutic Food (RUTF) and Ready-to-Use Supplementary Foods (RUSF); for example, Plumpy'Nut, vitamin A supplements, iron-folic acid supplements, and micronutrient supplements. These can be on tinplate or laminated packaging structures.
Medical supplies, wheelchairs, cold boxes.
Jerrycans/buckets (water containers), water purification tablets (Aquatabs, PUR), Water pumps, hygiene products (soap), menstrual hygiene products (single-use pads, reusable pads-ex. AFRIpads), water testing products, chemicals (such as chlorine), and equipment (for pump mechanics).
Stoves (fuel-efficient saving stoves), seeds, farming tools (hoes, axes, rakes, watering cans, buckets), storage (bags and sacks), fertilizers, pesticides, etc.
Paper, printed products, office equipment, electronic waste, etc.
Petroleum, oil, and lubricants. Electrical transformers with polychlorinated biphenyls (PCBs). Chemicals such as acid, chlorine, and pesticides. Asbestos-containing materials. Treated timber, etc.

Please indicate the link of the supply chain for which the solution can be applied? Describe how.

Identification of needs
Hygienic product
Conceptualization and planning
.....
Procurement – sourcing/ purchasing of products and services
.....
Goods collection in warehouses and repacking for transport to final destination
.....
Custom clearance
.....
Transport to the destination country (often multi-stage and using different modes of transport)
Air/Road
Transport to the final destinations – last mile
Easily transported
Storage at the final destination
Yes, will need to be kept dry
Operational logistic at final destination - distribution of goods and services
Yes

3. Plant-based absorbent article

Responsible partner: ITENE
INVESTIGATION LINE: V

Solution 3 **not on the final List**	**PLANT-BASED ABSORBENT ARTICLE**
Product / service	**X**
Technology	

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I. Basic information

Description of functions

What is the effect or final product?

An absorbent article, that is toxin-free and made from plant-based, biobased, all natural, clean ingredients. The absorbent article may be an adult incontinence product, a feminine hygiene absorbent pad, a postpartum absorbent product, a pants-style absorbent feminine hygiene product, a disposable changing pad, or a pet absorbent pad.

Description of technology and TRL level (if applicable)

Not applicable.

Description of product/service and TRL level (if applicable)

The absorbent article is a diaper made from plant-based resin, comprising a cotton top sheet with a wax-based coating deposited on an exterior surface of the first layer (adjacent to the wearer's skin, or "user-facing"); and a acquisition/distribution layer (ADL), wherein the ADL is comprised of two sub-layers of different materials, a first sublayer comprising an apertured film acquisition sub-layer disposed on top of, and laminated to, a second sub-layer comprising a non-woven acquisition layer.

No TRL information provided, but it is considered a TRL 7-8 (prototype demonstration).

Basic conditions of use

Please include also minimum requirements of a given solution regarding the availability of public infrastructure.

No information provided.

Please include the optimal scale/size of investment at which their solution or technology makes economic sense

No information provided.

What kind of waste the solution is able to utilize or valorise?

The solution focuses on the use of biobased materials from plants such as biopolyethylene (bioPE) or polylactic acid (PLA) or recycled materials such as staple fiber to substitute conventional fossil-based materials such as polyethylene and polypropylene.

To what extent does the use of a given solution or technology depend on climatic conditions?

It is not considered relevant.

Is it possible to refine the solution as an autonomous and mobile unit? (if applicable)

Not applicable.

Solution owner and his willingness to provide detailed technical and technological data

Zera Inc.,Cambridge, Massachusetts. No contact information was found.

Has the Life Cycle Analysis been already done for this solution?

No information available.

Source of data

Derwent Innovation patent search.

References

Please include a description and a photo of any examples of the implementation.

Absorbent article configured in the form of a diaper and in the form of a feminine hygiene product.

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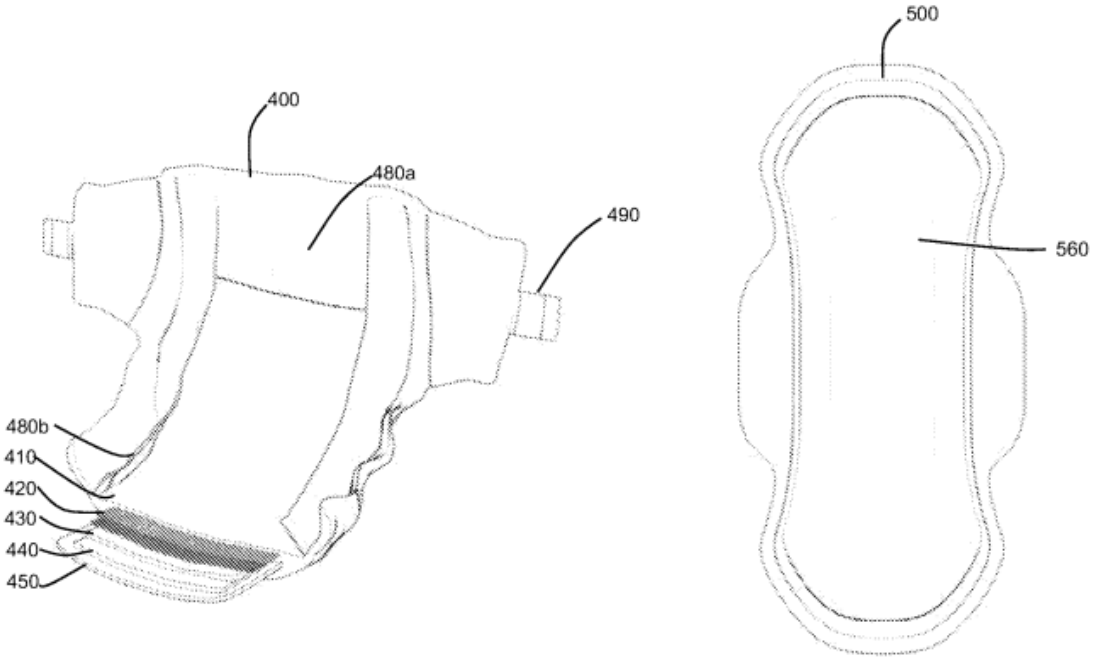
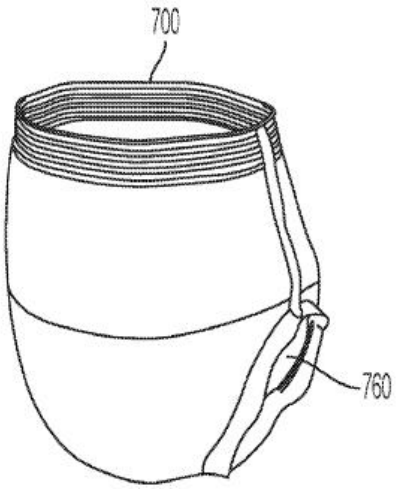


An absorbent article configured in the form of an adult incontinence product.



Source: *Derwent Innovation patent search.*

II. End-of-life stage addressed by the solution

Please describe if the solution refers to 4R Principle (Reduce, reuse, recycle, recover) biodegradability, composability or other means of end-of-life stage.

The end-of-life stage of the mentioned solution is biodegradability in some embodiments (when PLA is considered). It also allows a reduction of raw materials as plant-based materials are considered instead of conventional fossil-based materials.

III. Needs of the humanitarian sector and / or of the solid waste management constraints in the humanitarian settings addressed by identified solution

We are looking for:

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1) bio - based products / services *in order to diminish the amounts of waste generated by humanitarian interventions*
2) bio - based technologies *in order to cope with the amounts of waste generated in the humanitarian context.*

The expected characteristics of the bio-based solutions potentially applicable in the humanitarian context:
· *ability to eliminate the humanitarian waste, i.e. plastic, aluminium, metal, glass, paper & cardboard, organic, wood, medical and chemical;*
· *sustainability – addressing environmental, economic, and social factors; be adaptable to local conditions; provide long-term benefits without unintended negative consequences;*
· *utilization of local resources and knowledge.*

In case of a doubt as for the applicability of a given product, service or technology in the humanitarian context – please consult the Humanitarian Assessment Report prepared by People In Need and Polish Humanitarian Action. The Report is enclosed; also available in the SharePoint.

Please describe below how the solutions addresses the needs.

The solution allows a reduction of the humanitarian waste as biodegradable solutions are considered, which can biodegrade and prevent landfill.

IV. Logistic supply chains application potential - in which stage?

The 'humanitarian supply chain' *is defined as: "The planning, procurement, storage, transport and delivery of different forms of supplies, works & services used for projects and to respond to emergencies. This includes the flow of supplies from origin to destination but also more complex work of forecasting, optimising resources, value for money to ensure the most efficient process, and decreasing the carbon footprint of related operations"*

Type of waste in humanitarian context:

COMMODITY TYPE	***PACKAGING***
Grains, cereals	*Virgin woven PP bags*
Cornmeal, fortified flour	*Hybrid paper bags and PP woven bags with PE*
Fortified vegetable oil	*Steel cans, plastic bottles, cardboard cartons*
Specialised nutritious food products	*Metallised flexible plastic sachets and pouches, plastic box liners, cardboard cartons*

TYPICAL NON-FOOD ITEMS
Tents, shelter kits, tarpaulin, synthetic sleeping mats, blankets, clothes, mosquito nets, timber, cement.
Nutrition-specialized products, such as Ready-to-Use Therapeutic Food (RUTF) and Ready-to-Use Supplementary Foods (RUSF); for example, Plumpy'Nut, vitamin A supplements, iron-folic acid supplements, and micronutrient supplements. These can be on tinplate or laminated packaging structures.
Medical supplies, wheelchairs, cold boxes.
Jerrycans/buckets (water containers), water purification tablets (Aquatabs, PUR), Water pumps, hygiene products (soap), menstrual hygiene products (single-use pads, reusable pads-ex. AFRIpads), water testing products, chemicals (such as chlorine), and equipment (for pump mechanics).
Stoves (fuel-efficient saving stoves), seeds, farming tools (hoes, axes, rakes, watering cans, buckets), storage (bags and sacks), fertilizers, pesticides, etc.
Paper, printed products, office equipment, electronic waste, etc.
Petroleum, oil, and lubricants. Electrical transformers with polychlorinated biphenyls (PCBs). Chemicals such as acid, chlorine, and pesticides. Asbestos-containing materials. Treated timber, etc.

Please indicate the link of the supply chain for which the solution can be applied? Describe how.

Identification of needs

.....

Conceptualization and planning

.....

Procurement – sourcing/ purchasing of products and services

.....

Goods collection in warehouses and repacking for transport to final destination

.....

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Custom clearance
.....
Transport to the destination country (often multi-stage and using different modes of transport)
.....
Transport to the final destinations – last mile
.....
Storage at the final destination
.....
Operational logistic at final destination - distribution of goods and services
.....

4. NATY Compostable Wipes

Responsible partner: IBF
INVESTIGATION LINE: III

Solution 4 **not on the final List**	**NATY Compostable Wipes**
Product / service	*X*
Technology	

I. Basic information

Description of functions
What is the effect or final product?
Compostable wipes for hygiene purposes

Description of technology and TRL level (if applicable)
.....

Description of product/service and TRL level (if applicable)
Wipes are made of 100% natural fiber. Plastic free and home compostable. Made from bio-based materials.

Basic conditions of use
Please include also minimum requirements of a given solution regarding the availability of public infrastructure.
Please include the optimal scale/size of investment at which their solution or technology makes economic sense
What kind of waste the solution is able to utilize or valorise?
To what extent does the use of a given solution or technology depend on climatic conditions?
Is it possible to refine the solution as an autonomous and mobile unit? (if applicable)

N/A

Solution owner and his willingness to provide detailed technical and technological data
NATY, contacted but no response

Has the Life Cycle Analysis been already done for this solution?
Don't know

Source of data
https://www.naty.com/us/en/products/unscented-wipes/9995.html, **press@naty.com**

References

Funded by the European Union

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Please include a description and a photo of any examples of the implementation.

Source: *the web page of Naty*

II. End-of-life stage addressed by the solution

Please describe if the solution refers to 4R Principle (Reduce, reuse, recycle, recover) biodegradability, composability or other means of end-of-life stage.

Biodegradable and compostable

III. Needs of the humanitarian sector and / or of the solid waste management constraints in the humanitarian settings addressed by identified solution

We are looking for:
***1) bio - based products / services** in order to diminish the amounts of waste generated by humanitarian interventions*
***2) bio - based technologies** in order to cope with the amounts of waste generated in the humanitarian context.*

The expected characteristics of the bio-based solutions potentially applicable in the humanitarian context:
· ability to eliminate the humanitarian waste, i.e. plastic, aluminium, metal, glass, paper & cardboard, organic, wood, medical and chemical;
· sustainability – addressing environmental, economic, and social factors; be adaptable to local conditions; provide long-term benefits without unintended negative consequences;
· utilization of local resources and knowledge.

In case of a doubt as for the applicability of a given product, service or technology in the humanitarian context – please consult the Humanitarian Assessment Report prepared by People In Need and Polish Humanitarian Action. The Report is enclosed; also available in the SharePoint.

Please describe below how the solutions addresses the needs.

Reduces waste

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IV. Logistic supply chains application potential - in which stage?

The 'humanitarian supply chain' *is defined as: "The planning, procurement, storage, transport and delivery of different forms of supplies, works & services used for projects and to respond to emergencies. This includes the flow of supplies from origin to destination but also more complex work of forecasting, optimising resources, value for money to ensure the most efficient process, and decreasing the carbon footprint of related operations"*

Type of waste in humanitarian context:

COMMODITY TYPE	***PACKAGING***
Grains, cereals	*Virgin woven PP bags*
Cornmeal, fortified flour	*Hybrid paper bags and PP woven bags with PE*
Fortified vegetable oil	*Steel cans, plastic bottles, cardboard cartons*
Specialised nutritious food products	*Metallised flexible plastic sachets and pouches, plastic box liners, cardboard cartons*
TYPICAL NON-FOOD ITEMS	
Tents, shelter kits, tarpaulin, synthetic sleeping mats, blankets, clothes, mosquito nets, timber, cement.	
Nutrition-specialized products, such as Ready-to-Use Therapeutic Food (RUTF) and Ready-to-Use Supplementary Foods (RUSF); for example, Plumpy'Nut, vitamin A supplements, iron-folic acid supplements, and micronutrient supplements. These can be on tinplate or laminated packaging structures.	
Medical supplies, wheelchairs, cold boxes.	
Jerrycans/buckets (water containers), water purification tablets (Aquatabs, PUR), Water pumps, hygiene products (soap), menstrual hygiene products (single-use pads, reusable pads-ex. AFRIpads), water testing products, chemicals (such as chlorine), and equipment (for pump mechanics).	
Stoves (fuel-efficient saving stoves), seeds, farming tools (hoes, axes, rakes, watering cans, buckets), storage (bags and sacks), fertilizers, pesticides, etc.	
Paper, printed products, office equipment, electronic waste, etc.	
Petroleum, oil, and lubricants. Electrical transformers with polychlorinated biphenyls (PCBs). Chemicals such as acid, chlorine, and pesticides. Asbestos-containing materials. Treated timber, etc.	

Please indicate the link of the supply chain for which the solution can be applied? Describe how.

Identification of needs
Hygiene products
Conceptualization and planning
.....
Procurement – sourcing/ purchasing of products and services
.....
Goods collection in warehouses and repacking for transport to final destination
.....
Custom clearance
.....
Transport to the destination country (often multi-stage and using different modes of transport)
Can be easily transported using a range of different transport modes
Transport to the final destinations – last mile
Can be transported easily
Storage at the final destination
No specific information provided
Operational logistic at final destination - distribution of goods and services
Yes

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