BASALT·EVENT
CONFERENCE

BASALT CONFERENCE

INTERNATIONAL CONFERENCE

BASALT THE WEALTH OF NATIONS

CAPE VERDE
14 - 16 MARCH
2022

PRAIA
SANTIAGO ISLAND
CAPE VERDE

TERMS OF REFERENCE

TERMS OF REFERENCE OF THE INTERNATIONAL CONFERENCE

PREAMBLE

Agriculture is the backbone of the African economy and the Food and Agriculture Organization of the United Nations (FAO) reports that agriculture accounts for around 20% of the continent's GDP, 60% of its workforce, 20% of all exports and is the main source of income for rural populations on the continent. Recognizing the essential role agriculture plays in the food sustainability of a growing African population, African leaders have adopted a strong African Agriculture Development Program (*CAADP*), targeting an average annual agricultural growth rate of 6%..

In June 2006, African leaders gathered in Abuja, Nigeria, to take action on the importance of fertilizers for an African green revolution. The main outcome of this summit confirmed the commitment of African heads of state to rapidly increase the use of fertilizers on the continent, bringing the average from 9 kg / ha in 2006 to nearly 50 kg / ha in 2015, a target that has not yet been reached in 2021. At the 23rd African Union Summit, held in June 2014 in Malabo, Equatorial Guinea, African leaders adopted the Malabo Declaration on Accelerated Growth and Transformation of agriculture for shared prosperity and better living conditions for the African population, reaffirming that agriculture must remain at the forefront of the continent's development agenda.

In order to achieve the objectives of agricultural growth and the eradication of food shortage on the African continent established in the Malabo Declaration, within the framework of *CAADP* and in the Sustainable Development Goals (*SDGs*) adopted by the United Nations, a significant improvement in productivity is deemed necessary for heavily degraded African soils, estimated at over 40%. The African continent has 13% of the world's arable land and about 17% of the world's population. It is estimated that if the above stated goals are not met, many countries on the African continent will face food insecurity and unforeseeable consequences. Important factors contributing to the reduction of fertility of African soils are: complete elimination of crops from cultivated fields, unbalanced soil fertilization and little or no use of fertilizers.

Data from the Food and Agriculture Organization of the United Nations (FAO) published indicate that the largest consumers of fertilizer in Africa are South Africa, with 68.2 kg per ha in 2018, followed from North Africa, with an average consumption of 55.2 kg per ha.; East Africa with 20.7 kg per ha; and West Africa with 13.9 kg per ha (region where Cape Verde is located and the economic bloc of the Economic Community of West African States - ECOWAS).

The Central African region had the lowest consumption, at only 5.2 kg per ha. *FAO* data further showed that West Africa had the largest average increase in nutrient consumption, especially nitrogen, which nearly tripled in a decade, from 2.7 kg per ha in 2008 to 8 kg per ha in 2018; phosphate consumption increased over the same period from 0.9 kg per ha to 2.9 kg per ha.

Pages 5-7 of this document present the status of implementation of the Abuja Declaration on Fertilizers for an African Green Revolution, as well as a set of associated resolutions and their progress made, taken from the document published by *FAO* entitled «Stimulating African Soils». From ancient Greece (61-114 AD) to the present day, eminent specialists have devoted themselves to the problem of fertilizing agricultural soils based on the application of rock powders, due to the many advantages that this solution entails and a relevant contribution to the sustainability of agriculture, Africa and the modern world.

It is in this context that Cape Verde will host, from March 14 to 16, 2022, an international event on the theme «*APPLICATION OF BASALT POWDER IN AGRICULTURE* - Its advantages as fertilizer for agriculture».

WORLDWIDE
Average consumption of fertilizers
2018
107 Kg / ha

NORTH AFRICA
Average consumption of fertilizers
2018
55.2 Kg / ha

WEST AFRICA
Average consumption of fertilizers
2018
13.9 Kg / ha

CENTRAL AFRICA
Average consumption of fertilizers
2018
5.2 Kg / ha

EASTERN AFRICA
Average consumption of fertilizers
20.7 Kg / ha

ATLANTIC·EVENT
BUSINESS FORUM

THE ECOWAS
AGRICULTURAL INDICATORS

Cabo Verde:
» Terres agricoles (% du territoire):19,6%
» Agricultural land (km²): 790
» Forest area (% du territoire): 11,3
» Fertilizer consumption: ------- Kg / ha
» Cereal production: 3.893 mt
» Cereal yield: 123 kg /ha
» Cereal crop area: 31.698 ha
» Added value per worker: 4.639 USD

Bénin:
» Agricultural land (% of territory): 35%
» Agricultural land (km²):39 500
» Forest area (% du territoire):27,8
» Fertilizer consumption: 36,6 Kg / ha
» Cereal production: 2.315.556 mt
» Cereal yield: 1432 kg /ha
» Cereal crop area: 1.616.613 ha
» Added value per worker: 1.772 USD

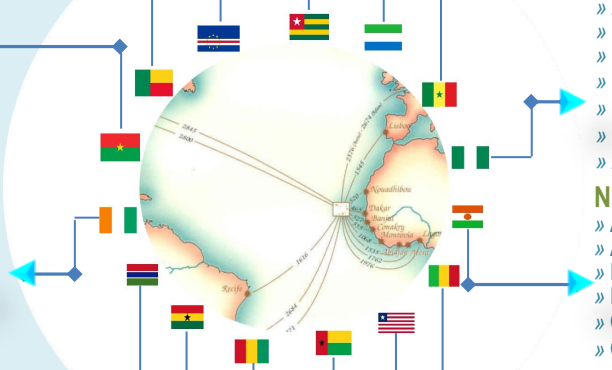
Burkina Faso:
» Agricultural land (% of territory): 44,2%
» Agricultural land (km²): 121 000
» Forest area (% du territoire): 22,7
» Fertilizer consumption: 17,6 Kg / ha
» Cereal production: 4.991.259 mt
» Cereal yield: 1.108 kg /ha
» Cereal crop area: 4.505.001 ha
» Added value per worker: 1.772 USD

Côte d'Ivoire:
» Agricultural land (% of territory): 66,7%
» Agricultural land (km²): 212 000
» Forest area (% du territoire): 8,9
» Fertilizer consumption: 30,9 Kg / ha
» Cereal production: 3.266.110 mt
» Cereal yield: 2.278 kg /ha
» Cereal crop area: 1.433.734 ha
» Added value per worker: 2.741 USD

Gambie:
» Agricultural land (% of territory): 59,8%
» Agricultural land (km²): 6 050
» Forest area (% du territoire): 24,0
» Fertilizer consumption: 8,0 Kg / ha
» Cereal production: 222.119 mt
» Cereal yield: 841 kg /ha
» Cereal crop area: 264.277 ha
» Added value per worker: 1.892 USD

Ghana:
» Agricultural land (% of territory): 65.0%
» Agricultural land (km²):147 827
» Forest area (% du territoire): 35,1
» Fertilizer consumption: 29,4 Kg / ha
» Cereal production: 3.573.636 mt
» Cereal yield: 1.864 kg /ha
» Cereal crop area: 1.916.882 ha
» Added value per worker: 3.302 USD

Togo:
»Agricultural land (% of territory): 70,2%
» Agricultural land (km²): 38 200
» Forest area (% du territoire): 22,2
» Fertilizer consumption: 5,8 Kg / ha
» Cereal production: 1.338.743 mt
» Cereal yield: 1.146 kg /ha
» Cereal crop area: 1.168.582 ha
» Added value per worker: 1.717 USD



Guinée Conakry :
» Agricultural land (% of territory): 59.0%
» Agricultural land (km²):145 000
» Forest area (% du territoire): 25,2
» Fertilizer consumption: 3,2 Kg / ha
» Cereal production: 3.911.040 mt
» Cereal yield: ----- kg /ha
» Cereal crop area: 3.295.749 ha
» Added value per worker: 875 USD

Sierra Leone:
»Agricultural land (% of territory): 54,7%
» Agricultural land (km²): 39 490
» Forest area (% du territoire): 35,1
» Fertilizer consumption: ------ Kg / ha
» Cereal production: 1.028.954 mt
» Cereal yield: 1.149 kg /ha
» Cereal crop area: 895.640 ha
» Added value per worker: 1.383 USD

Sénégal:
» Agricultural land (% of territory): 46,1%
» Agricultural land (km²): 88 780
» Forest area (% du territoire): 41,9
» Fertilizer consumption: 22,3 Kg / ha
» Cereal production: 1.746.643 mt
» Cereal yield: 1.302 kg /ha
» Cereal crop area: 1.341.597 ha
» Added value per worker:3.023 USD

Nigeria:
» Agricultural land (% of territory): 75,9%
» Agricultural land (km²): 691 235
» Forest area (% du territoire): 23,7
» Fertilizer consumption: 19,7 Kg / ha
» Cereal production: 26.216.277 mt
» Cereal yield: 1.509 kg /ha
» Cereal crop area: 17.373.539 ha
» Added value per worker:5.878 USD

Niger:
» Agricultural land (% of territory): 36,8%
» Agricultural land (km²):466 000
» Forest area (% du territoire): 0,9
» Fertilizer consumption : 0,4 Kg / ha
» Cereal production: 6.099.863 mt
» Cereal yield: 555 kg /ha
» Cereal crop area : 10.995.187 ha
» Added value per worker: 780 USD

Mali:
» Agricultural land (% of territory): 33,8%
» Agricultural land (km²): 412 010
» Forest area (% du territoire): 10,9
» Fertilizer consumption: 24,8 Kg / ha
» Cereal production: 10.159.685 mt
» Cereal yield: 1.796 kg /ha
» Cereal crop area: 5.658.124 ha
» Added value per worker:1.261 USD

Libéria:
» Agricultural land (% of territory): 20,3%
» Agricultural land (km²): 19 540
» Forest area (% du territoire): 79,1
» Fertilizer consumption: ------ Kg / ha
» Cereal production: 257.995 mt
» Cereal yield: 1.084 kg /ha
» Cereal crop area: 238.090 ha
» Added value per worker: 802 USD

Guinée Bissau:
» Agricultural land (% of territory): 29,0%
» Agricultural land (km²):8 151
» Forest area (% du territoire): 70,4
» Fertilizer consumption: ------- Kg / ha
» Cereal production: 214.463 mt
» Cereal yield: 1.312 kg /ha
» Cereal crop area: 1.63.433 ha
» Added value per worker: 1.063 USD

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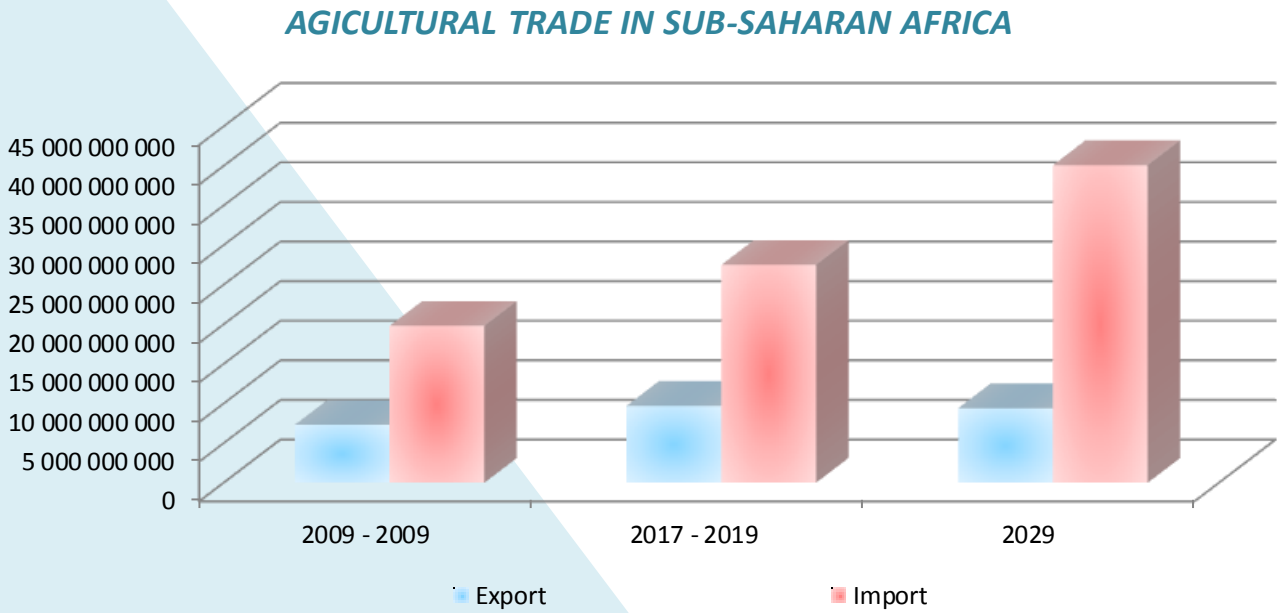
3. AGRICULTURAL TRADE IN SUB-SAHARUN AFRICA



EXPORT
Average growth
Projection - 2029
-3.1%

EXPORT
Average growth
2020 - 2029
-0.6%

IMPORT
Average growth
2010 - 2019
2.6%

IMPORT
Average growth
2020 - 2029
3.5%

EXPORT
Average growth
2010 - 2019
1.8%

IMPORT
Average growth
Projection - 2029
45.8%

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1. CONTEXT AND RATIONALE

Food and nutritional security still remains and will always be a priority for each Nation. The unparalleled rise in the prices of agricultural factors of production has brought back a major demand for food programs in various regions of the world. In addition to this dietary requirement, there is an environmental emergency as a result of pollution and runoff from artificial fertilizers which represents a great threat to human health. Markets are increasingly looking for sustainable alternatives that can eliminate the waste that drains from farms to waterways.

In Africa, in general, structural factors such as drought, climate change, growing demography amplify the cyclical causes and cause food and nutritional crises. Agro-pastoral and fishing activities are highly dependent on the climate, the spatio-temporal variability of which and extreme events influence the living conditions of the populations. In addition, the intense and increasing pressure exerted by the populations on the environment for access to natural resources, contributes to accelerate land degradation and the impacts of climate change. Adaptation to climate change is a sine qua none condition for the food security of populations in each country, which should be integrated into sustainable development policies at national, regional and international levels. In this context, food and nutrition security is taken into account in all sustainable economic and social development plans and strategies which are translated into programs and projects that underpin initiatives at the international, regional and national levels.

In June 2006, African leaders met in Abuja, Nigeria, to take action on the importance of fertilizer for an African green revolution. The main outcome of this summit confirmed the commitment of African heads of state to rapidly increase the use of fertilizers on the continent, bringing the average from 9 kg / ha in 2006 to minus 50 kg / ha in 2015, target which has not yet been reached.

Over the past decades, relevant applied research centers, universities and governments have devoted themselves to finding alternatives to traditional chemical fertilizers, both with a view to increasing agricultural profitability and the quality of the food produced and the environmental Protection. The application of rock powder in agriculture has proven to be a proven solution for agriculture to meet the challenges facing contemporary society, both in the present and in the future.
The use of rock powders to fertilize the soil is an age-old technique (the Inca and Egyptian civilizations already relied on the use of rock byproducts for soil fertilization), which has been left out, by expanding the use and supply of soluble fertilizers. However, the rise in the prices of these products has left a growing number of farmers without the possibility of fertilizing the soil and thus guaranteeing a production compatible with their efforts and the investments made.

Pollution runoff occurs when rain, snowmelt or irrigation systems flood land that has been fertilized with man-made products.

In modern agriculture, *NPK* fertilizers are frequently applied at higher concentrations than can be absorbed into the soil, causing the remaining nitrogen and phosphorus to be flushed out through water flows. There are a variety of issues associated with this process, and the large number of people who have been or could be affected.

Unlike conventional fertilizers, which focus only on the direct supply of *NPK* nutrients to plants, the agricultural soil fertilization solution based on the application of rock powder, in addition to very positive effects on agricultural profitability, on the quality of the food produced, has an incisive impact on the sequestration of carbon dioxide (CO_2) in the atmosphere. Basaltic rocks have a composition rich in chemical elements which are nutrients for plants, making them suitable for use in agriculture, improving soil fertility, protecting the environment, increasing agricultural profitability and dramatically improving quality. of food produced.

It is in this context that under the slogan «*Basalt, the wealth of nations*», Cape Verde will host an International Conference, from March 14 to 16, 2022, on the theme «*APPLICATION OF BASALT POWDER IN AGRICULTURE* - Its advantages as a fertilizer for agriculture», bringing together some of the most eminent international researchers in the field of the use of basalt rock powder for the fertilization of agricultural soils.

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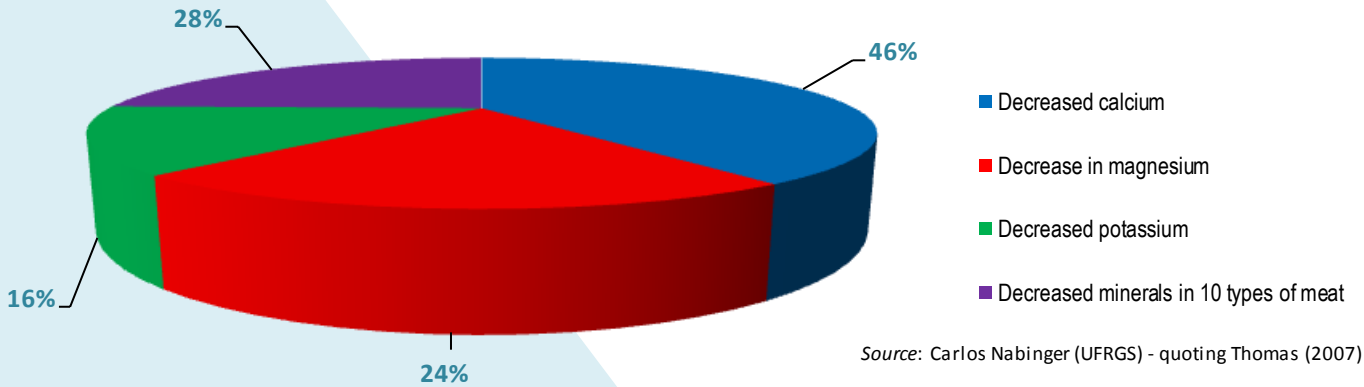
2. QUALITY OF THE FOOD PRODUCED

Studies indicate that conventional agriculture does not allow proper uptake of elements by plants, as 85-90% of nutrient acquisition by plants is mediated by microorganisms. Studies also indicate that in the absence of minerals, people need to eat twice as much meat, three times as much fruit and four to five times as many vegetables to ingest the same amount of minerals at 1940s levels. The need for better management of agricultural soils for the benefit of human health is therefore imperative.

Decrease in certain nutrients in the composition of foods
1940 to 2002



Source: Carlos Nabinger (UFRGS) - quoting Thomas (2007)

In 2014, at the *UNIDAVI* University Center (Rio do Sul - SC in Brazil), a group was formed to grow nutritionally safer food crops and revealing experiments were carried out.

Experiments carried out with organic onion using rock powder showed the following results: 82% more calcium than conventional cultivation; 48% more magnesium and 30% more potassium than in conventional cultivation. Regarding the Zn content, cultivation using rock powder in soil fertilization has shown an extraordinary increase in the zinc (Zn) content in the food produced: 1073%! In other words, the conventional culture has a low zinc (Zn) content. University thesis, proving the quality of food produced with basalt powder.

Treatments	NUTRIENT ACCUMULATION									
	N	P	K	Ca	Mg	B	Cu	Fe	Mn	Zn
No fertilization	13,9	1,7	14,1	16,0	4,3	47,5	15,5	247,0	987,0	40,0
NPK	13,9	2,2	12,4	18,4	4,4	45,2	6,2	331,0	976,0	41,3
NPK +micro	13,4	1,4	10,5	16,1	4,1	47,1	7,0	330,0	991,0	44,1
Basalt powder	15,7	2,3	14,1	22,9	5,6	52,2	7,6	477,0	1001,0	42,0

In addition to the fertilization based on basalt rock powder to significantly improve the quality of the food produced, the use of this technology influences the cost of agricultural production, as it is several times more economical than the conventional practice. The acquisition costs of rock powder are much lower than those of chemical fertilizers, and its effect on agriculture can extend over a period of four to five consecutive years. Soil fertility levels increase (especially P, K, Ca and Mg input) after application of rock powders. Agricultural productivity is equivalent or superior to that obtained by conventional fertilization. In some cases, yields can be up to 30% higher than those obtained using chemical inputs.

Legenda:

N = Nitrogen	**P** = Phosphorus	**K** = Potassium	**Ca** = Calcium	**Mg** = Magnesium	**B** = Boron	**Cu** = Copper	**Fe** = Iron	**Mn** = Manganese	**Zn** = Zinc

TERMS OF REFERENCE OF THE INTERNATIONAL CONFERENCE
HISTORY OF THE USE OF ROCK POWDER IN AGRICULTURAL SOIL FERTILIZATION
3. BASALTAGEM

Cape Verde is an island country located in the central region of the Atlantic Ocean, approximately 450 km from Senegal, made up of 10 main islands with approximately 2,000 km of coastline and an area of 4,033 km2, having an economic zone exclusive of 734,265 km2. . Basalt is the most abundant rock in Cape Verde and constitutes its main natural wealth, manifesting itself in quality and quantity, especially through imposing mountains, such as Pico do Fogo (island of Fogo) with 2,289 meters of altitude; the Topo de Coroa (island of Santo Antão) with 1,979 meters above sea level; Pico d'Antónia (Island of Santiago) at 1,392 meters above sea level and Monte Gordo (Island of São Nicolau) at 1,304 meters above sea level. Cape Verde's basalt reserves can thus contribute to the development of national industries, boost scientific and technological development and the integration of the country's economy into the regional area of West Africa, promote trade intra-regional.

BASALTAGEM is a new concept adopted in Cape Verdean vocabulary, in honor of Cape Verde's greatest natural wealth: basalt, and the exceptional specificities of basaltic rocks as a source of nutrients necessary for plants and for correcting degraded agricultural soils. This is the ancient practice of adding inorganic compounds, of mineral origin, rock powder to the soil, which act as patches and fertilizers in agricultural soils, being a technique aimed at remineralizing soils by application direct to the soil of nutrients needed by plants.

Historically, the use of fertilizer has been practiced since ancient Greece, and the report of the use of *BASALTAGEM* is characterized by Plínio, a Roman naturalist, (61-114 AD), when he stated that limestone being a sedimentary rock that contains minerals in amounts of up to 30% calcium carbonate could be mixed with the soil to form a thin layer, thus providing sufficient fertilizer for agricultural crops.

Other eminent specialists of that time, like Columelo, recognized that the use of limestone or ash could help reduce soil acidity levels. Experiments based on the application of gypsum in agricultural plantations in the 18th century, conducted by Benjamin Franklin, observed the growth and development of pastures following this application of gypsum.

Relevant work was developed in the 19th century through agricultural practices, with great influences recorded in the study of the use of *BASALTAGEM*, namely the work titled «Pães de Pedra» published by Julius Hensel, German scientist and considered the father of agrochemistry, in 1898, in Leipzig, Germany, where the importance of the potential of fertilizing agricultural soils with rock powders is discussed, «Turning stones into food».

The technology of using *BASALTAGEM* (Rochagem in Brazil) as a source of fertilizer for agricultural land in Brazil was introduced in the 1950s in the state of Minas Gerais by two researchers, Josué Guimarães and Vlademir Ilchenjo.

Professor and researcher Othon Leonardos, from the University of Brasilia, has developed several research works in this area, with an emphasis on testing different types of Brazilian rocks, giving the geochemical and agronomic aspects a distinctly social nature and environmental investigation. Professor Emeritus Othon Leonardos is currently one of the most outstanding and prestigious researchers in Brazil and internationally in the field of Rochagem / *BASALTAGEM*.

Currently, the practice of using rock powder for fertilizing agricultural soils, with its multiple advantages, is already a reality in several countries, including Brazil, the United States of America, Canada and Africa, successful experiments have already been carried out for the benefit of countless cultures. The costs of acquiring rock powders are considerably lower and their effects can be felt for a period of four to five consecutive years. Soil fertility levels increase, especially with regard to the availability of P, K, Ca and Mg after the application of rock powders. Agricultural productivity is equivalent or superior to traditional conventional fertilization practices. In some crops, yields can be more than 30% of those obtained with chemical inputs.

4. MAIN ADVANTAGES OF BASALT POWDER

» The basalt powder in the revitalisation of agricultural land:

- Slow release of nutrients for plants;
- The losses of nutrients by leaching are reduced;
- Easy to apply;
- It has the potential to neutralize soil acidity (pH);
- It has no acidifying or salinizing properties for the soil;
- The presence of silicon reduces the fixation of phosphorus in soils and is able to indirectly increase the available levels of this element;
- It is a source of the calcium nutrients (Ca), magnesium (Mg) and beneficial element silicon (Si);
- It is a source of iron micronutrients (Fe), manganese (Mn) and optionally copper (Cu), zinc (Zn) and vanadium (V);
- It can replace or supplement chemical fertilization;
- It increases the efficiency of chemical fertilization and has highly positive effects;
- Lower incidence of pests and diseases in plants;
- Increases productivity particularly in fruit trees and cereals.

» Basalt powder improves yields:

- It increases the growth of beneficial microorganisms, resulting in an increase in plant nutrients.
- Balances Soil.
- It makes nutrients available to plants at all stages of development.
- Provides essential nutrients.
- One application continuously releases minerals throughout an entire season.

» Basalt powder Increases Nutritional Value of agricultural products

- Can increase the cation exchange capacity of highly weathered soils.
- Speeds composting.
- May help release phosphates more readily to the plant.
- The standard dosage is equivalent to a 20 kg bag of basalt powder on 40 m^2.
- Basalt powder will recondition the soil naturally, giving healthier plants, fruit and vegetables and higher yields, aster.

» Contains: Calcium and Magnesium Silicate

- Adequate silicon nutrition may help protect plants from insect and fungal diseases and prevent micronutrient toxicities and other nutrient imbalances.
- Silicon is also known to improve water use efficiency and enhance root growth and structural strength, increasing the photosynthetic efficiency.
- Silicon compounds impact on soil physical and chemical properties such as soil aggregation, water holding capacity and exchange and buffering capacity.

» Ingredients

Basalt powder is a soil enhancer and 100% remineralizer, thus forming a new and fertile soil.

» Volcanic Rock

In the form of a fine dust, volcanic rock contributes to soil friability and contains micro-nutrients. It also serves as a natural insect deterrent.

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5. THE MAIN CONSTITUENT ELEMENTS OF BASALT

- ***Silicates:***

Silicates are necessary in building plant protein and in the synthesis of certain vitamins in plants. Silicates function as a vital element in protecting plants against insects and fungi attack, strengthening qualities and have been found to influence other minerals useful in plant metabolism.

- ***Calcium:***

Plants need calcium for normal cell division, as a component of cell walls, as a component of the salts inside the cells and as a part of the genetic coding materials.

- ***Magnesium:***

Magnesium is a key component of the chlorophylls, the green coloured cells in the plant. It is therefore vital as chlorophylls are the cells which perform photosynthesis. Also, plants need magnesium before thay can make use of phosphorous and magnesium also activates several different enzyme systems.

- ***Iron:***

Iron is a constitutent of many compounds in plants that regulates and promotes growth. It is especially important to the function of chloroplasts, the plant cells that contain chlorophyll, which are the particles that perform photosynthesis.

- ***Potassium:***

Potassium strengthens plant stalks and helps undo the stress induced by excess nitrogen.

- ***Phosphorus:***

Phosphorus is the «Go» food for plants.

- ***Trace Minerals:***

Basalt is a source of iron, manganese, and some types of basalts are sources of copper, zinc and vanadium.

- ***As a soil remineralisation product, Basalt Powder:***

  - It causes an impressive growth of beneficial microorganisms in the soil and induces the development of plant roots.
  - Raises the moisture and nutrient storage capacity of the soil.
  - Makes mineral nutrients readily available, increasing their intake by plants.
  - Makes mineral nutrients available at all stages of plant growth.
  - Provides sustained-release properties.
  - Contracts the effects of soil acidity [pH].
  - Decreases toxic interchangeable aluminum.
  - Reduces soil erosion.
  - Contributes to the building of stable humus complexes.
  - Improves resistance to insects, disease, fungus, frost and drought.

Basalt powder can be supplied in small quantities for gardening or in large quantities for intensive and extensive farming.

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6. STATUS OF IMPLEMENTATION OF THE ABUJA DECLARATION ON FERTILIZER

According to the *FAO*, recent data indicate that despite the progress made, the average fertilizer use in Africa was 11 kg / ha in 2014, well below the Abuja Declaration target of 50 kg / ha. ha, and ten times less than the world average. This figure was expected to reach 12 kg / ha by the end of 2015. While the trend remains positive, there is clearly some way to go to reach the target of 50 kg / ha, set by the Abuja Declaration. Today, the goal should not be to decisively increase the amount of fertilizer, but to increase good quality arable land as the main strategy on the agenda for many African countries.

Status of implementation of the Abuja Declaration on Fertilizers for an African Green Revolution

Indicator	Status
Establishment of policy and regulatory	Unsatisfactory
Capacity for quality control	Satisfactory
Elimination of taxes and tariffs	Not satisfactory
Creation of networks of distributors of agricultural inputs	Satisfactory
Distance traveled to buy fertilizers	Good
Increase in the number of farmers using chemical fertilizers	Good
Increase in market size	Partially satisfactory
Introduction of targeted subsidies	Satisfactory
Introduction of national financial means in favor of importers and distributors of agricultural inputs	Good
Introduction of regional purchasing initiatives	Satisfactory
Improved access to additional inputs	Satisfactory
Creation of the African Fertilizer Development Finance Mechanism (AFFM)	Not satisfactory

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6. STATUS OF IMPLEMENTATION OF THE ABUJA DECLARATION ON FERTILIZER

According to the *FAO*, in order to implement the Abuja Declaration, an action plan was put in place which included the creation of networks of distributors of agricultural inputs across rural Africa, the establishment of mechanisms national agricultural input credit guarantees, the use of «smart» subsidies to ensure that small farmers can access fertilizers, the establishment of regional fertilizer purchase and distribution centers, the elimination of trade barriers and the promotion of local fertilizer production as well as the establishment of an African Fertilizer Development Funding Mechanism by the African Development Bank. The table below shows the series of resolutions and the progress and achievements made for each of them so far.

Abuja Declaration on Fertilizers: Achievements up to now.

Resolution	Progress/ Results
1. Increase the rate of fertilizer use from an average of 8 kg / ha to an average of at least 50 kg / ha in 2015.	Nutrient consumption per ha still remains quite low with most countries falling well below the target of 50 kg / ha and therefore the progress made is insufficient.
2. Reduce the cost of supplying fertilizer at national and regional levels particularly through the harmonization of policies and regulations to ensure free circulation without taxes and customs duties across regions, and capacity building in quality control.	The cost of fertilizers has not fallen to affordable levels for small farmers. With regard to the introduction of quality control measures and the elimination of taxes and tariffs on fertilizers, they are progressing in the right direction, although the adoption and implementation of the laws on fertilizers and the supportive regulatory framework continue to be lacking.
3. Develop and strengthen networks of agricultural input distributors as well as community networks.	There is a marked improvement in the development and strengthening of agricultural input distributor networks.
4 Meet the fertilizer needs of farmers, especially women. Build the capacity of young people, farmers' associations, civil society organizations and the private sector.	The «Women Accessing Realigned Markets» *(WARM)* program has helped meet the needs of women in the agricultural sector. The private sector takes part in training courses and workshops.
5. Targeted subsidies in favor of the fertilizer sector, with particular attention to less advantaged farmers.	The system of targeted price support for inputs has been adopted in different countries with some degree of success.
6. Accelerate investment in infrastructure, especially in transport, tax incentives, strengthening of farmers' organizations, and other measures to improve incentives for product marketing.	The Africa Infrastructure Development Program *(PIDA)* and the Africa50 Fund are important initiatives to promote regional and continental infrastructure development. *COMESA, SADC* and the Community of East African States have master plans for improving infrastructure along trade corridors.

Abuja Declaration on Fertilizers: Achievements up to now	
Resolution	Progress / Results
7. Establish national financing mechanisms in favor of input suppliers in order to accelerate access to credit at local and national levels, with particular attention to women.	Agricultural credit guarantee systems have been put in place with credit guarantee schemes available in 77 percent of the member states which were studied by *NEPAD* in 2012. Mechanisms linked to transfer and diversification risks have been introduced in favor of importers and distributors of agricultural inputs.
8. Establish regional mechanisms for the supply and distribution of fertilizers.	There has been an increase in the number of fertilizer production and mixing plants while the old ones have been modernized.
9. Promote national / regional fertilizer production and intra-regional fertilizer trade.	Bulk mixing plants have been installed. The level of trade in fertilizers between member states has increased considerably.
10. Improve farmers' access to quality seeds, irrigation facilities, extension services, market information, soil nutrient mapping and analysis to facilitate effective and efficient fertilizer use of minerals and biologicals, while caring for the environment.	There are a relatively high number of farmers with access to quality seeds, although those who use products to protect their crops have declined. Farmers can now access information through various means and irrigated land has been extended.
11. Establish by 2007 an African mechanism for the development of fertilizers which will have to meet the financing conditions of the various measures agreed by the Summit.	The African fertilizer development finance mechanism managed by the African Development Bank *(AfDB)* was set up in March 2007. However, it is not yet legally operational since Member States have not yet complied with their financial commitments.
12. Establish a mechanism for monitoring and evaluating the implementation of the Declaration.	A mechanism for monitoring and evaluating the application of the Declaration has been set up by the Commission of the African Union *(AUC)* which since 2007 reports on the progress of the application to the Heads of African State.

6. STATUS OF IMPLEMENTATION OF THE ABUJA DECLARATION ON FERTILIZER

According to the FAO, by assessing the state of implementation of the action plan, several obstacles that have contributed to the slowing of progress at the national and regional levels have been identified. These include:

» Financial constraints that hamper the functioning of the African fertilizer development finance mechanism;

» Insufficient number of agricultural input distributors,

» Ineffective fertilizer laws;

» Undeveloped commercial infrastructure;

» Imposition of taxes and tariffs;

» limited access to finance and subsidies;

» Insufficient agricultural research and development;

» Inadequate extension services;

» Generally low investment in sustainable soil management practices.

According to FAO, these obstacles clearly need to be overcome through:

» Stimulating demand and supply for sustained restoration of soil nutrients as part of a good sustainable soil management approach;

» Capacity building to improve farmers 'skills in crop management and reorientation of agricultural extension messages to match farmers' needs, taking into account various agro-ecological systems and socio-economic conditions communities;

» Improving the links between products and marketing;

» The combination of organic and inorganic inputs;

» The formulation of recommendations for efficient use that correspond to the types of soil and their current nutrient content as well as the requirements of the crops envisaged and which take into account local knowledge and practices;

» Investing in agricultural research so that fertilizers and fertilizer application methods can best match soil characteristics, plant physiology, environmental conditions and social contexts and that improvements in fertilizers and their application are carried out on the basis of all this information;

» Collection of recent data, reliable data and information on levels of soil degradation and fertilizer requirements.

TERMS OF REFERENCE OF THE INTERNATIONAL CONFERENCE
7. MAIN OBJECTIVES OF THE EVENT

The main objectives of the International Conference are:

» Present the state of the art of basalt powder research and application in agriculture;

» Present scientific, technical and technological solutions allowing the sustained restoration of nutrients in agricultural soils and making sustainable soil management possible;

» Present solutions for the fertilization of agricultural soils at an affordable cost for all small and medium farmers;

» To present agricultural soil fertilization solutions that protect the environment and the health of farmers;

» To present practical experiences and results of using rock powders in the fertilization of agricultural soils;

» To present solutions allowing the capacity building of farmers in order to improve the management of soils and crops as well as the socio-economic conditions of the communities;

» Disseminate the latest findings on scientific and technological progress in the application of basalt powder in agriculture as well as future prospects;

» Consolidate the results of research carried out by African and international scientists on the application of basalt powder in agriculture as an alternative source of nutrients for the soils of tropical Africa, in addition to fostering and encouraging partnerships with their external counterparts;

» Introduce the application of basalt powder in agriculture as a viable and appropriate technology for the orientation of public policies aimed at diversifying the types of inputs used in agriculture for soil fertilization in Africa;

» Analyze and conclude the mechanisms and procedures to be adopted in the legislation and regulation of the marketing practices of basalt powder as a fertilizer and nutrient for plants;

» Define and adopt strategies to promote the technology of application of basalt powder in agriculture so that it is considered as an appropriate medium for environmental sustainability and agricultural production, to meet the needs of the domestic and regional market, in particular to meet the needs of family farming in the *ECOWAS* region and in Africa in general;

» Position the potential of basalt powder application in agriculture as an appropriate mechanism to rejuvenate semi-degraded soils in *ECOWAS* and Africa in general;

» Promote the creation of a network of researchers involving universities, research and development centers, business associations and companies, either in research projects and programs, or in the commercialization of basalt powder for 'Agriculture;

» Promote and consolidate university-industry cooperation and partnerships;

» Prepare a publication in which will be inserted the most relevant works and papers presented at the event and which will serve as a guide for future work.

TERMS OF REFERENCE OF THE INTERNATIONAL CONFERENCE
8. PROGRAM OPERATION

The International Conference on «*THE APPLICATION OF BASALT POWDER IN AGRICULTURE* - Its advantages as a fertilizer» is organized in 7 (seven) thematic conferences; in 1 (one) thematic panel and a Round Table, lasting three days.

The moderator of each thematic conference / panel has the first 10 minutes to present the topic. After the intervention of the guest speakers and the speakers for each of the panels and thematic conferences, there will be a period of debate during which the participants will generally have the opportunity to express themselves actively.

Each speaker, who will be a leading expert on each topic, will have one hour and 45 minutes to present his topic, including the discussion period.

Registration, article submission, as well as full information are available on the web platform www.basaltconference.com. Additional information can be obtained at the e-mail address events@basaltconference.com or at other contact details on these sites, namely the technical secretariat of the event and the Focal Points.

Also part of the event is a social program where participants in general and guests in particular can enjoy a pleasant stay in Cape Verde before, during and after the five days of the event.

Various packages and programs for guided tours to the main points of tourist attraction, both Praia (the capital of Cape Verde) and other islands are also available. Guided tours will also be organized to some basalt exploration sites in Cape Verde.

In the evening, two periods of social programs are reserved. On the third and last day of the event, a welcome reception is organized for the delegations participating in the event.

Three working languages with simultaneous translation will be available: Portuguese, English and French.

The Technical Secretariat of the event will be permanently accessible and available to meet the special and particular needs of the participants in the event in question.

9.1. Participants

Municipalities, businesses and entities related to agriculture; agribusiness; environmental protection; livestock; Business; industry; tourism; logistics; manufacturing industry; agro-food; TIC; national and local authorities; Embassies; investment agencies; National, regional and international financial institutions, insurance companies; Chambers of Agriculture; farmers and agricultural producers; Chambers of Commerce and Local and External Industry, Universities, Scientific and Technological Institutions; Cooperation and Development Agencies; economic operators, in general, in all sectors of economic and commercial activity.

9.2 Development of the work

The Event will take place in plenary sessions on March 14 and 16, 2022 and on March 16 a Round Table on Integration and Debates will be held on March 16, 2022 which will close the International Conference, according to 12 main sequences, made up of Opening and Closing Sessions, one (1) Panel and these (7) Thematic Conferences, detailed in the event program (attached).

9.2.1. Sequence 1: Opening Ceremony

The March 16 session will begin with the Opening Ceremony, which will be chaired by a personality of national significance, who will deliver the opening speech of the International Conference..

9.2.2. Sequence 2: Conference I

Over the past decades, applied research centers, universities and governments concerned have devoted themselves to the search for alternatives to traditional chemical fertilizers, either with a view to increasing agricultural profitability or to quality of food products and environmental protection. The application of rock powder in agriculture has proven to be a proven solution for agriculture that is up to the challenges facing contemporary society, both in the present and in the future.

The opening session will be followed by **Conference I** under the theme «*CURRENT STATE OF RESEARCH ON THE USE OF BASALT POWDER AND CONSOLIDATION OF ITS APPLICATION IN AGRICULTURE*» through which a retrospective of:

» The historical evolution of process of adoption of rock powders in agriculture;

»Scientific and technological advances;

»The current state of scientific and technological development of the sector;

»The advantages of this technology;

»The outlook and future trends in the development of rock powder application technology in agricultural soil fertilization, including normative and legislative experiences on rock powder application in agriculture.

This **Conference I** will take place on March 14, 2022 and will last 1h45, including debate period. The speaker, Mr. Eder Martins, Professor and researcher at *EMBRAPA* - Brazilian Agricultural Research Society, is one of the most respected and prestigious researchers currently in the field of the application of rock powder in agriculture and having been co-author of the Standards for the application of rock powder in agriculture, adopted in the form of a Law in his country: Brazil.

9.2.3. **Sequence 3: Conference II**

Using rock powder to fertilize soils is an ancient technique (Inca and Egyptian civilizations already used rock byproducts for soil fertilization), which was left out, due to the expansion the use and supply of soluble fertilizers. However, the rise in the prices of these products has left a growing number of farmers with no option to fertilize the soil and thus guarantee production compatible with their efforts and the investments made.

Brazil is one of the countries most dependent on fertilizer imports for the sustainability of agricultural activities and it is estimated that around 80% of the fertilizers consumed in Brazil are imported. This reality has led Brazil to adopt a set of laws and standards that frame remineralizers (rock powders) as a material of mineral origin that has only undergone a reduction in size and classification by mechanical processes and which modifies the soil fertility indices by adding macro and micronutrients to plants, thus promoting the improvement of the physical or physicochemical properties or of the biological activity of the soil (Law n ° 12 890/2013).

All the laws and standards in force in Brazil have provided legal certainty and increased the interest of Brazilian farmers, including large producers, in the use of this technology, in particular due to the fact that productivity presented results compatible with the average production obtained with the use of soluble fertilizers. Other facts that have reinforced the use of this technology relate to the costs, which are considerably lower for remineralizers, as well as the ease of access and application.

Conference II, entitled «*FROM RESEARCH TO LEGISLATION AND REGULATION OF THE APPLICATION OF BASALT POWDER IN AGRICULTURE*»: Brazil as a Case Study" presents the Brazilian experience in the use of the technology of rock powder, as well as experience in the production and enforcement of related Laws with the use of rock powder as an input for agriculture and its impact on the agricultural sector in Brazil.

Conference II will take place on March 14, 2022, lasting 1h45, including a period of debate. Dr Suzi Huff Theodoro, professor and researcher in the Graduate Program in Environment and Rural Development at the University of Brasilia, will participate in this conference. She has established herself as one of today's most respected researchers in the field of rock powder application for agricultural purposes. In addition, she has actively contributed to the conduct of regulatory proposals on the use of rock powder for fertilization and recovery of Brazilian agricultural soils.

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9.2.4. **Sequence 4: Conference III**

It is estimated that around 60% of the African workforce is employed in agriculture, and women are estimated to be responsible for 60 to 80% of the food produced and marketed in Africa. According to data from NEPAD - New Partnership for Africa's Development, dated July 2016, the African continent is home to 65% of the planet's fertile uncultivated land and 10% of renewable freshwater resources. One of the most important current and future challenges for humanity is associated with the quality and quantity of food produced for human consumption.

The **Conference III**, under the theme «*RECONSTRUCTION OF THE SOIL AND THE ENVIRONMENT WITH THE APPLICATION OF BASALT POWDER FOR INCREASED FOOD PRODUCTIVITY AND QUALITY*» will be given by Professor Bernardo Knapik, biologist and researcher at the University of 'State of Paraná. Professor Bernardo Knapik has devoted his activity and scientific prestige to what constitutes one of the greatest and most exciting challenges of contemporary society:

the quality of the food produced, based on the fertilization of agricultural soils with rock powder. This theme will take place on March 14, 2022 and will last 1h45, including the debate period. The speaker will present a cause and effect relationship between the use of rock powder in food production and its beneficial impact on human health.

9.2.5. Sequence *5 : Conference IV*

In sub-Saharan Africa, the population has more than doubled since 1960, and per capita food production has declined dramatically over the same period, despite all the development efforts undertaken during this period. One of the main causes of the decline in this food production is due to factors related to the fertility of agricultural soils, growing problems related to soil erosion, excessive irrigation, deficiencies in nutrients necessary for agricultural crops, among others.

The ***Conference IV*** on the theme «*USE OF BASALT POWDER IN AGRICULTURE* - Case Studies» will be given by one of the most prestigious and internationally recognized researchers: Professor Emeritus Peter van Straaten, University of Guelph, Canada.

Professor Peter van Straaten is the author of several studies and publications which are unique sources of information on the rock and mineral resources available in sub-Saharan Africa for use in agriculture. The geological studies and data provided by Professor van Straaten cover some 48 countries in sub-Saharan Africa, including valuable studies and information related to agriculture, minerals and rocks available locally in sub-Saharan Africa with high potential for development of agricultural application.

Professor van Straaten can analyze and conclude on the success of phosphate rock applications in key agricultural areas of the East African region and how this has helped to increase crop yields. He also concluded how the use of basalt powder in agriculture can contribute to the capture of carbon dioxide *(CO2),* being one of the discoveries that will have a great impact on the environment.

The theme of ***Conference IV*** will take place on March 14, 2022, lasting 1h45, including the period of debates.

9.2.6. Sequence *6 : Conference V*

The Food and Agriculture Organization of the United Nations - *FAO* is one of the United Nations agencies, a global symbol in the direction of global efforts for food self-sufficiency for the benefit of all Nations.

Composed of nearly two hundred member countries and present in nearly one hundred and thirty countries, *FAO* unites nations around a global strategy for the development of agriculture and food, and nurtures the hope of a food availability for billions of people.

Conference V, under the theme «*THE CHALLENGES OF SUSTAINABLE DEVELOPMENT*: - The need for strategic management of nutrients in agriculture», will be given by the Food and Agriculture Organization of the United Nations. The contribution expected from *FAO's* intervention will contribute to:

»Provide an overview of the nutrient situation for agriculture in Africa and future prospects;

»Provide an overview of research and technological development activities applied to fertilizers for agricultural sustainability on the African continent;

»Provide a guiding and strategic vision for the positioning of sustainable agricultural research and development activities in Africa;

»Make a contribution to the orientation of synergies to position the research and development activities of fertilizers oriented towards family farming and small farmers of the African continent.

An update during the event of the various themes included in the *FAO* document entitled «Stimulating African Soils» will certainly be an important contribution for researchers dedicated to agricultural development and food security.

9.2.7.* Sequence *7 : Conference VI

***Conference* VI**, under the theme «*ROCHAGEM: HISTORY, FUTURE PROSPECTS AND NEW CHALLENGES*», will be given by Professor Emeritus of the University of Brasilia, Othon Henry Leonardos.

Professor Othon Leonardos began his academic and scientific life at the University of Brasilia in the early 1970s, as Head of the Department of Geosciences. Professor Othon Leonardos is a post-doctoral fellow at the University of Western Ontario, Canada; PhD from the University of Manchester, England; Masters from the University of California, United States of America; geologist from the Federal University of Rio de Janeiro, Brazil; full member of the Brazilian Academy of Sciences, Earth Sciences.

Professor Othon is the author of two hundred publications, with fundamental works in geochemistry, metamorphism, genesis of mineral deposits, kimberlites and rochagem (fertilization of agricultural soils with rock powder for sustainable agriculture, having guided dozens of theses, dissertations and monographs, including actions oriented towards the environment.

Professor Othon's research avenues:

- Metamorphic petrology;
- Alkaline rocks, carbonatites and kimberlites;
- Geochemistry;
- Metalogenesis, hydrothermalism;
- Granitogenesis;
- Pedology;
- Tipping (fertilization of agricultural soils with rock dust).

Among others, the theme of Professor Othon's Conference will address:

- The historical evolution of agrominerals in the fertilization of agricultural soils;
- The fundamentals of the application of agrominerals in the fertilization of agricultural soils;
- The geological resources available for fertilizing agricultural soils;
- The importance of Rochagem in the sustainability of family farming and small farmers;
- The importance and impact of Rochagem in responding to the food challenges of the growing world population;
- The importance of Rochagem in the production of sustainable agriculture and in responding to environmental challenges now and in the future.

Professor Othon is one of the pioneers in the introduction and development of rock powder technology in Brazilian agriculture.

***9.2.8.* Sequence *8:* Panel I**

Panel I under the theme «*BASALTES: AGROMINERAL POTENTIAL AND OPPORTUNITIES OF THE PRODUCTION CHAIN*» has the privilege of the intervention of the notable researcher of the Geological Survey of Brazil: MSc. Magda Bergmann.

Dr Magda holds a master's degree in geosciences and is a geological researcher at the Geological Survey of Brazil *(CPRM).*

MSc Magda Bergmann develops relevant activities in the scientific and technological context, in particular studies and research in the strategic field of mineral and rock sources for the remineralization of agricultural soils (soil fertilization with the use of rock powder), researching the availability of accessible agricultural inputs that promote the sustainability of the mining sector, through the use of minerals and rocks as mining co-products and by-products, provided they are suitable for use as agricultural inputs. The process contributes to the production of healthy food and also has the potential to mitigate impacts on the environment.

The fields of scientific activity of MSc Magda include, among others:

- Geological map;
- Research of siliceous agrominerals;
- Geological mapping;
- Look for gems in geodes;

The intervention of the MSc Magda in Panel I will address, among others, the following topics:

- Basalt rock as alternative inputs for agricultural production;
- The specific characteristics of basalt in the development of Agrominerals;
- Micronutrients provided by the basalt rock matrix;
- Industrial chain and industrial and agromineral potential of basaltic rocks.

The fields of Geosciences; Earth and exact sciences, Rocking as a sustainable alternative to fertilizers and soil mineralization are part of the broad field of activity of the MSc Magda Bergmann.

9.2.9. Sequence *9 : Conference VII*

Agriculture is the backbone of the African economy and the most recent data from the Food and Agriculture Organization of the United Nations *(FAO)* describes that agriculture accounts for around 20% of the continent's *GDP*. , 60% of its workforce and 20% of all exports and is the main source of income for rural populations on the continent. Recognizing the critical role agriculture plays in the food sustainability of Africa's growing population, African leaders have adopted a robust Africa Agricultural Development Program *(CAADP)* targeting an average annual agricultural growth rate of 6%.

The African Development Bank *(AfDB)* is a Multinational Development Bank, created in 1964, of which 54 African countries are members. It also has as shareholders a group of European, American and Asian countries. The main mission of the ADB is to promote economic development and social progress on the African continent, by supporting and financing the development of infrastructure, structuring projects for member countries and private initiatives.

The *AfDB* is headquartered in Abidjan, Côte d'Ivoire. The African Development Bank Group comprises the African Development Fund *(ADF),* created in 1972, and the Nigeria Special Fund, created by the Nigerian state in 1976.

The participants in the International Conference of Cape Verde include specialists who, since the beginning of the 1970s, have had as fundamental activities scientific and technological research focused on the search for solutions for the fertilization of agricultural soils, aimed at increasing the profitability of the agriculture, improving the quality of food produced and the protection of the environment.

The theme of **Conference VII** «*THE AGRICULTURAL DEVELOPMENT CHAIN OF THE AFRICAN CONTINENT* - From production to industrialization», will be presented by the African Development Bank, and will be a unique opportunity to bring together this important development institution and international experts who develop scientific and technological solutions, which can contribute to:

»A transfer of scientific and technological experience from the" Rochagem "region to the African continent and its application in agriculture;

»Modernize and transform the African agricultural sector;

» Guide scientific and technological research efforts focused on the solution of fertilization of agricultural soils on the African continent;

» Share the experience of using rock powder in agriculture for the benefit of farmers in Africa;

» A transfer to the African continent of agricultural experiences and practices which contribute to the protection of the environment and increase the profitability of agricultural production and the quality of the food produced;

» Insert African agricultural producers into the international network of scientific and technological innovation;

» ncrease the income of African agricultural production and reduce the external food dependency of the African population.

The theme of Lecture VII will take place on March 15, 2022 and will last 1h45, including debate period.

9.2.10. Squence 10 : Round Table of Integration and Debates

Interventions at the «Round Table of Integration and Debates» should focus on the use of rock dust in agriculture and its scientific and technological specificity. Among these scientific and technological specificities, the speakers will be able to focus their attention on the following points:

a) Current and historical realities of the use of rock dust in the fertilization of agricultural land; The general orientations and trends of public policies, scientific, technological and environmental factors which support the fundamental principles of the use of rock powder in the fertilization of agricultural soils ;

b) The different categories and types of nutrients that incorporate the chemical composition of basalt giving it the natural conditions of fertilizers; Public policies for scientific and technological research, legislative process, regulation and control of the use of basalt powder in agriculture;

c) The mechanisms and their respective roles and functions in the formulation, implementation, control and monitoring of the quality of foods produced based on the use of rock powder in the fertilization of agricultural soils; The relationship between the use of rock powder in the fertilization of agricultural soils and the agricultural profitability and quality of the food produced;

d The types and qualities of agricultural soils likely to benefit and the potential for using the rock powder from the respective fertilization; Trends in present and future development of the use of rock powder in agriculture;

e) The cause and effect relationship between the use of rock powder in the fertilization of agricultural soils and its effects on the preservation of the environment.

After the interventions of the specialists in each theme forming part of the program of the «*Round Table of Integration*», a period of debate will open during which all present will be able to intervene to present their points of view, as well as to confront the specialists to issues strictly related to the topics under discussion.

9.2.11. **Sequence 11: Closing session and communication**

During this closing session, a brief summary of the conclusions of the International Conference will be presented with comments and a closing address.

At the end of the Session, a press conference will take place during which a representative of the external delegations and some participants will intervene.

9.2.12. **Sequence *12 : Welcome dinner «THE FLAVORS OF ECOWAS»***

On March 16, there will be a welcome dinner with the participation of all participants in the event and guests from national and international institutions present in Cape Verde as well as individual.

This sequence will allow socialization between all those present because it will allow the establishment of networks networks between researchers and participants which will take effect after the event.

10. **Roundtable on integration and debates**

Basaltic rocks have a composition rich in chemical elements which are nutrients for plants, making them suitable for use in agriculture, improving soil fertility, protecting the environment, increasing agricultural profitability and dramatically improving quality. of food produced.

The use of rock powders to fertilize the soil is an age-old technique (the Inca and Egyptian civilizations already relied on the use of rock byproducts for soil fertilization), which has been left out, by expanding the use and supply of soluble fertilizers. However, the rise in the prices of these products has left a growing number of farmers without the possibility of fertilizing the soil and thus guaranteeing a production compatible with their efforts and the investments made. Technological developments in recent decades have made it possible to produce rock powders for agriculture at a cost compatible with the purchasing power of the entire population.

It is in this context that a «Round Table of Integration and Debates» will take place on March 16, 2022, bringing together some of the most eminent international researchers in the field of the use of rock powder for the fertilization of agricultural soils. The following will also participate in this round table: professionals from the agricultural sector; environmental protection professionals; nutrition professionals; academics; researchers; municipal managers and national and international development decision-makers.

11. **Place and dates**

The International Conference will take place in Cape Verde, Praia, in the Noble Hall of the National Assembly, from March 14 to 16, 2022. The program for March 16 consists of a Round Table of integration and debates.

12. **Working languages**

Three working languages will be used: French, English and Portuguese.

13. **Communication**

Communications will be made by national, regional and international experts, individually or on behalf of the institution they represent.

14. Registration

14.1 A registration form is available.
It should be completed by any person or invited participant and sent by e-mail: events@atlanticbusinessforum.com / helpdesk@atlanticbusinessforum.com.

14.2 Application forms can be downloaded from the following website: https://www.basaltconference.com/e/form/.

14.3 Entries can also be submitted online on the website: https://www.basaltconference.com/register/form/.

14.4 The conditions of participation are specified on this site.

14.5 For each group of 10 participants in the event, the organization assumes the participation costs for the eleventh element.

14.6 For each group of 25 participants the organization assumes the participation costs for two (2) additional elements.

15. Transfer of Registration

A duly registered participant, if he is confronted with the impossibility of participating in the event, may transfer his registration to a third party. To this end, the replacement participant must be perfectly identified and accept the same conditions as the substituted participant.

16. Official groups and delegations

For groups (minimum 10 Pax), official delegations or government entities, the Organization must be contacted for specific treatment.

17. Visa

The visa application, for participants who need it, is made via a platform available on the internet (www.ease.gov.cv). Exceptionally, it can be requested in embassies, consular posts or on arrival in the national territory, Cape Verde, upon payment of a surcharge. The cost of the Visa is paid directly to the competent authorities: approximately € 30.00. If necessary, the Organization can assist participants in the process of obtaining visas

18. Protocol Services

Protocol Services to participants will be provided by the Cape Verde Hotel and Tourism School (https://www.ehtcv.edu.cv/). For official delegations, the Organization will communicate the procedures on a case-by-case basis in due course. Upon arrival at Cape Verde airport, participants will find a qualified team ready to help with all the necessary formalities and able to develop communication in three languages: Portuguese; French and English, namely:

5.8.1 Protocol at the airport for the reception of delegations at the airport and transfer to the hotel;
5.8.2 Protocol during each day of the event to register participants and support the event.

19. Transfers

19.1 When participants arrive in Cape Verde, they are provided with means of transport on the Airport / place of accommodation / Airport routes.

19.2 Participants are provided with means of transport on the trips to the place of accommodation / place of the event / place of accommodation.

20. Accommodation

The diversity and quality of the accommodation units available as well as the reception and hospitality conditions ensure that participants have a pleasant stay at the event. Accommodation is provided, in hotels and private apartments, for participants who so wish, both in Cape Verde and in transit countries for a one-way trip to Cape Verde and return from Cape Verde.

20.1 A form is available and must be completed if the participant is interested.

20.2 The reservation forms can be downloaded from the following website:
https://www.basaltconference.com/register/hotels/form/

20.3 Reservations can also be made online on the website:https://www.basaltconference.com/register/hotels/online/.

20.4 The reservation conditions are specified on this website.

21. Air travel

Support is provided for air travel reservations, with airlines, for participants who so wish.

21.1 A reservation form is available to be completed by interested participants.

21.2 Booking forms can be downloaded from the following website:
https://www.basaltconference.com/register/flights/form/

21.3 Reservations can also be made online on the website:https://www.basaltconference.com/register/flights/online/.

21.4 The reservation conditions are specified on this site.

22. Catering services

22.1 The lunch services during the days of the event, as well as the welcome reception, on March 14, and the «THE FLAVORS OF ECOWAS» welcome dinner, on March 16, will be provided by the Hotel and Tourism School of Cape Verde (https://www.ehtcv.edu.cv/).

22.2 During the activities of the event, water and coffee break services will be available, provided by specialized services assigned to the National Assembly of Cape Verde.

22.3 The days of the event will be available at lunch time, transportation on the routes to the event location / restaurant location / event location.

22.4 The meal reservation form can be downloaded from the following website:
https://www.basaltconference.com/register/catering/form/

22.5 Meal reservations can also be made online at: https://www.basaltconference.com/register/catering/online/

22.6 For midday meals, lunches, during the days of the event, transport will be available on the routes depending on the location of the event / location of the catering / location of the event.

23. Currency and exchanges

The currency in common use in Cape Verde is the Cape Verdean escudu. All international currencies are accepted. The Euro is accepted in current transactions in Cape Verde and has a fixed parity with the Escudu (1 € = 110 265 Escudus). For any additional information on currencies and exchange rates, it is recommended that you consult the official website of the Central Bank of Cape Verde:
https://www.bcv.cv/pt/Paginas/Homepage.aspx.

24. Internet services

Internet services will be available at accommodation and event venues.

25. Institutional meetings

Where applicable, the Organization will be responsible for requesting the programming of institutional meetings / meetings with the competent entities, exclusively for the host country, Cape Verde.

26. Disclosure of products and services of participating companies

In order to publicize their products and services, companies participating in the event have a specific web platform through which their products and services can be disclosed on all markets covered by the objectives of the event.

26.1 For each company participating in the event, in addition to the placement of the respective logo, there will be a brief description of the characteristics of the products and services, in three languages: Portuguese; English and French ;

26.2 The information disseminated on said website will be kept up to 120 days before the date of the next edition of the event, in the event that the company decides not to participate in the next edition;

26.3 Companies not participating in the event and wishing to disclose their products and services on the aforementioned site may do so by paying a monthly, quarterly, semi-annual or annual fee;

26.4 A specialized team will permanently keep the information entered on the web platform and companies may request at any time and free of charge modifications / corrections / updates of the information;

26.5 The companies participating in the event may also, during the period of validity of the respective information, in the space reserved on the web platform, publish quarterly newsletters through which information relating to the respective products and services is disclosed in three languages: Portuguese; English and French. The aforementioned specialist team will periodically and selectively distribute the aforementioned newsletter to potential importers and exporters;

26.6 Any request for information on products or services by potential interested parties, including any order, will be promptly communicated to the target company.

27. Event documentation

All event documentation can be downloaded directly from the event platform:
https://www.basaltconference.com/e/eventsdocs/

28. Social events

An integral part of the event is a social program where guests in general and participants in particular can enjoy a pleasant stay in Cape Verde before, during and after the three-day event. In the evening, two periods of social programs are reserved.

On the first day of the event, March 14, a welcome reception will be organized for the delegations participating in the event and on March 16, there will be a dinner entitled: Welcome dinner «*THE FLAVORS OF ECOWAS*».

29. Hostesses

Professional and qualified service is a requirement and an asset at international events. Upon arrival at Cape Verde airport and at the venue of the event, participants will have accessible and permanently available teams of qualified and highly experienced professionals, ready to communicate in three languages: Portuguese, English and French, to assist and support them in their participation in the event. This service is provided by the Cape Verde Hotel and Tourism School.

Ce service est assuré par l'École d'Hotélerie et Tourisme du Cap Vert.

30. Leisure packages

Various packages and programs for guided tours of the main tourist attractions, either in Praia (capital of Cape Verde) or in other islands, are also available.

31. Changes

The Organization reserves the right to modify the program of the event as well as the General Conditions of Participation whenever this is justified, however, it must inform the interested party beforehand.

32. Insurance

Three (3) types of insurance are offered to participants:

32.1 Personal accident insurance

This insurance covers any type of accident that may occur during the period during which the events take place. This same insurance may also include travel and luggage cover (loss, loss or damage to luggage; clothing and personal items transported in suitcases, bags or other suitably packed items belonging to the Insured.

32.2 Travel insurance

Likewise, protection insurance is available with the following characteristics:

32.3 Multi-trip to Cape Verde

Insurance applicable exclusively for trips taking place in Cape Verde.

32.4 Multiple trips abroad

Insurance applicable for trips abroad.

32.5 Foreign multi-trip + PVFM

Insurance applicable for trips abroad. Includes protection against cancellation due to force majeure.

32.6 Complements

32.6.1 Medical expenses: Increase in the Medical Expenses capital of the Basic Insurance.

32.6.2 The Insurance Services are guaranteed by the specialized company: A GARANTIA (https://www.garantia.cv/). At the following link https://www.basaltconference.com/e/seguros/ you can find all the information relating to insurance.

TERMS OF REFERENCE OF THE INTERNATIONAL CONFERENCE
9. ORGANIZATION OF THE INTERNATIONAL CONFERENCE

37. PAYMENT OPTIONS

The Organization accepts different payment methods:
37.1 The following bank cards and payment cards, on their websites (secure site) or when booking by telephone:

THROUGH BANK ACCOUNTS IN CAPE VERDE :
***37.1.1* Easylink vinti4**
Service that facilitates the creation of one-off online payments for any productt.
37.1.2 vinti4 card
37.1.3 VISA card
37.1.4 Mastercard

37.1.5 Bank transfer:
37.1.5.1 Bank account in Cape Verdean escudos [ECV];
37.1.5.2 Bank account in euros; [Eur]; and
37.1.5.3 Bank account in dollars [USD].

THROUGH BANK ACCOUNTS IN EUROPE [SEPA ZONE]:
37.2.1 Multibanco
37.2.2 MB Way
37.1.3 VISA card
37.1.4 Mastercard
37.1.4 Boleto Banking
37.1.4 Direct Debits

37.1.5 *Bank transfer*:
37.1.5.2 Bank account exclusively in Euros [Eur].

IMPORTANT NOTICES:
NT-01: The Organization actively participates in the fight against bank card fraud. In this context, the Organization may ask the buyer, by any means at its disposal, to photocopy the bank card used to pay for the order, as well as the passport or identity card of the bank card holder. and the participant. In the absence of a response from the buyer or if it is impossible to contact the buyer within the limits relating to the dates of the event, the organization will not be able to process the order and the reservation request will be canceled free of charge.

NT-02: The legislation requires that the commitment made to pay by bank card or payment card be irrevocable. Opposition to payment can only be made in the event of loss, theft or fraudulent use of the card. With the exception of these cases, the card holder will be held responsible for credit card fraud. The right to oppose payment cannot be used to compensate for the absence of the right of withdrawal applicable in the event / tourism sector.

NT-03: *By bank transfer*
The Organization accepts payments by bank transfer in Euros (bank accounts in Europe and Cape Verde) and Cape Verdean Escudos and Dollars to bank accounts in Cape Verde. This confirmation of transfer must imperatively be confirmed by e-mail, the contact details of which will be transmitted during the validation of the order. In the confirmation of the bank transfer, the surname, first name and reference of the Order must be included, which will be provided by the Organization. Confirmation must be sent before the deadline set by the Organization.

NT-04: Price and payment
All prices communicated by the Organization are free of any fees or taxes. All costs related to payment are the sole responsibility of the buyer.

TERMS OF REFERENCE OF THE INTERNATIONAL CONFERENCE
38. POINT FOCAL
AFRIQUE OCCIDENTALE

CÔTE D'IVOIRE

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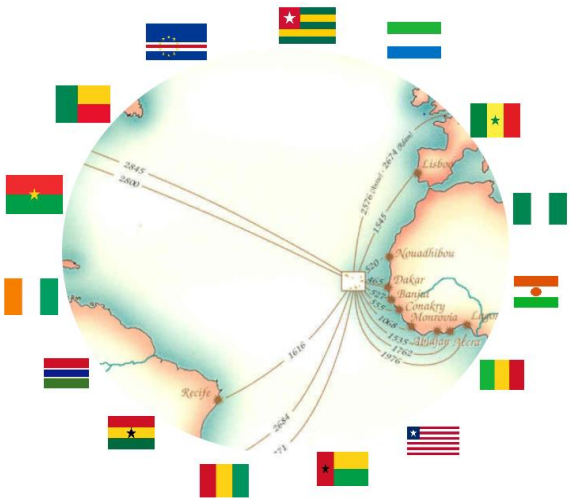

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