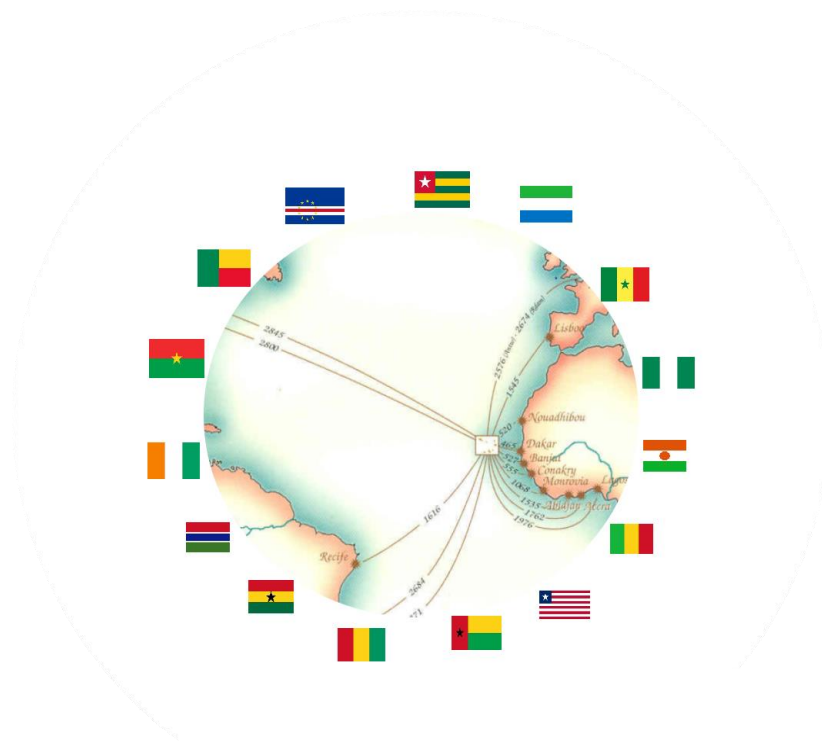


# BASALT CONFERENCE

## ROUND TABLE OF INTEGRATION AND DEBATES

### DISCUSSION GUIDE



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## ROUND TABLE DISCUSSION GUIDE

JUNE 09

**2021**

**PRAIA  
CABO VERDE**



## FRAME

Agricultural land can be degraded for many reasons, including: shifting cultivation (or agricultural nomadism), overgrazing, over-exploitation of soils, excessive deforestation, soil salinization after years of intensive irrigation, repeated soil flooding, as well as by natural wear process of rocks (weathering), among others. In this sense, it is necessary to redouble our efforts, to take measures and adopt practices to restore degraded soils and, consequently, restore their fertility.

In June 2006, African leaders gathered in Abuja, Nigeria, to take action to highlight the importance of fertilizers for an African green revolution. The main outcome of this summit confirmed the commitment of African Heads of State to achieve a rapid increase in the use of fertilizers on the continent, increasing the average from 9 kilograms per hectare in 2006 to at least 50 kilograms per hectare in 2015, a target that even to this day, 2021, has not yet been met, as shown by the data presented in the following two pages of this document.

The average fertilizer consumption in Africa is 10 kg / ha, about 10% of the world average, and almost 20 times less than the Asian average (191 kg / ha) and 9 times less than the Latin American average (94 kg / ha). The low use of fertilizers in Africa is due to the high price of fertilizers, given the purchasing power of farmers and the lack of alternatives available to producers and farmers.

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 Environmental protection. The application of rock powder in agriculture has proven to be an appropriate solution for agriculture to meet the challenges facing contemporary society, both in the present and in the future.

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 greatly 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 by-products 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 allowed the production of 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, bringing together some of the most eminent international researchers in the field of the use of rock powder for the fertilization of agricultural soils. Professionals from the agricultural sector will also participate in this round table: professionals in environmental protection; nutrition professionals; academics; researchers; Municipal managers and national and international development decision-makers.

In this document, it is presented, in addition to the program of the aforementioned "Round Table", the Guide for Discussion and Debates which will take place on June 9, 2021.

## ROUND TABLE DISCUSSION GUIDE

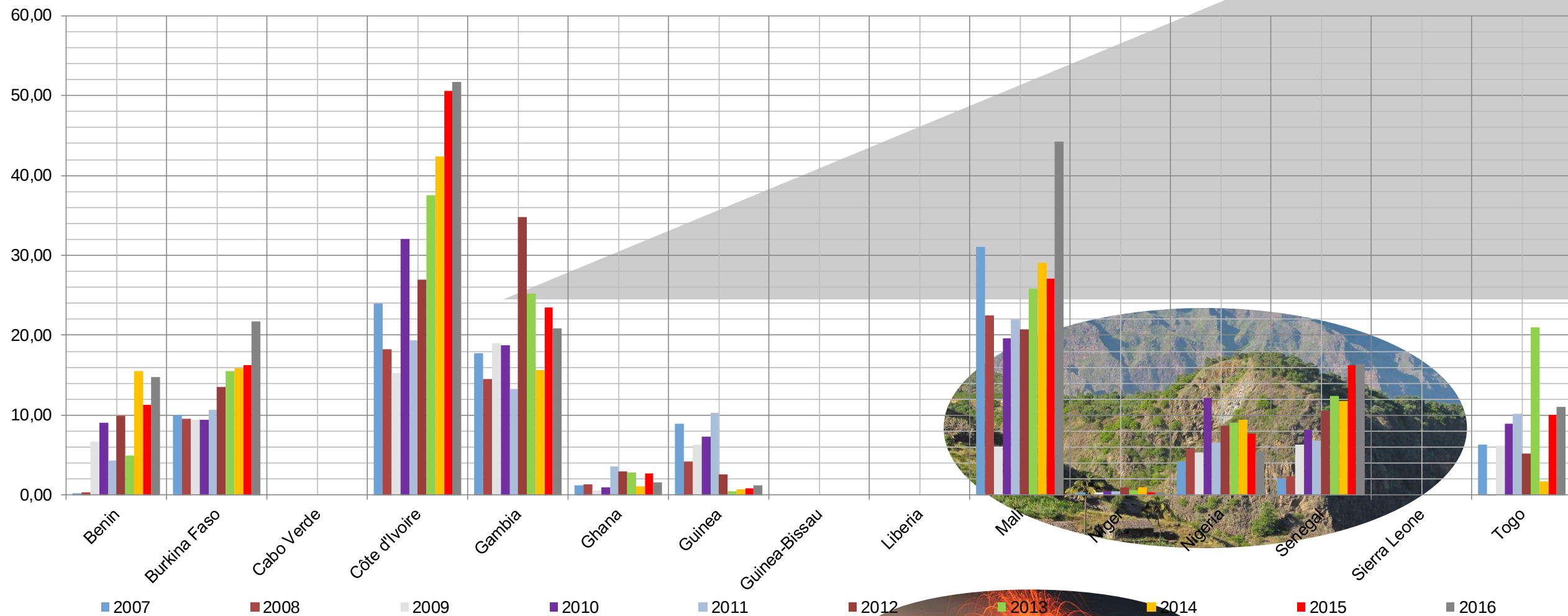
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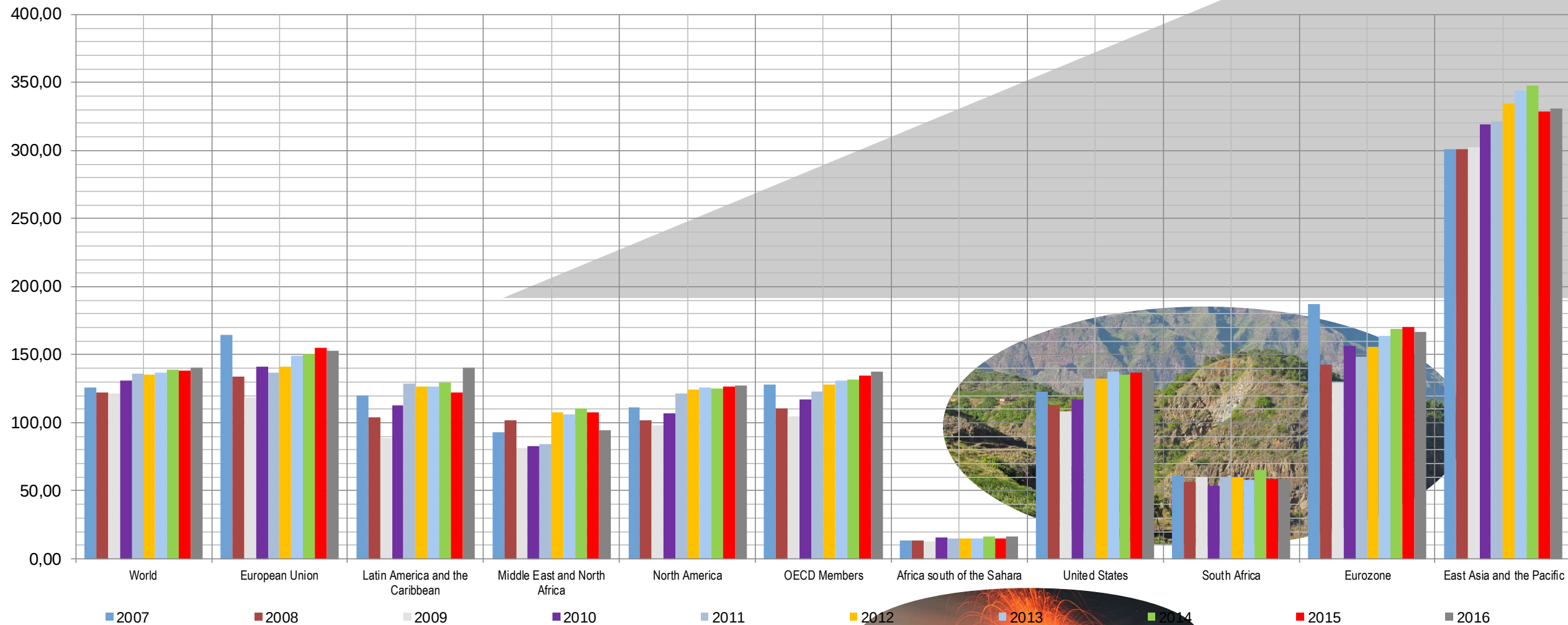
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## CONSUMPTION OF FERTILIZERS IN ECOWAS [Kilograms per hectare of arable land]



## INTERNATIONAL FERTILIZER CONSUMPTION [Kilograms per hectare of arable land]



## PURPOSE OF THE ROUND TABLE

The objective of the «Roundtable on Integration and Debates» is to allow scientific and technological knowledge and the sharing of national, regional and international experiences in the context of the use of basalt powder in the Fertilization of agricultural soils and its advantages with the aim of increasing agricultural profitability, the quality of food produced and environmental protection.

The Round Table reinforces the emphasis placed on the scientific and technological foundations of «Rochagem» as an adequate instrument to respond to food security, healthy eating and environmental protection.

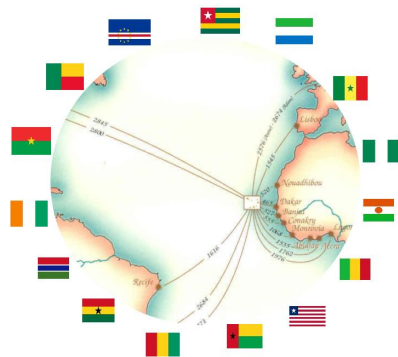
The Round Table also aims to provide public and private decision-makers with a set of tools and knowledge that can support policies oriented towards good practices in profitable and sustainable agriculture based on "Rochagem" technology, particularly in the fields of research scientist; legislative processes; the regulatory and quality control processes of foods produced on the basis of the use of rock powders in the fertilization of agricultural soils.

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**ACCREDITATION : From 7:30**

- 08:00 – 09:30 **Theme I:** Research, Legislation, Regulation and Technology of «Rochagem»  
**Moderator:** ANMCV - National Association of Municipalities of Cape Verde  
**Interventions of Experts:**  
■ Prof. Suzi Huff Theodoro – Researcher at the University of Brasilia  
■ Prof. Émélite Peter van Straaten – Research Fellow at the University of Guelph - Canada  
■ Prof. Eder de Souza Martins – Researcher at EMBRAPA (Brazilian Society for Agro-Livestock Research)
- 09:30 – 09:45 Debates  
09:45 – 11:15 Coffee break  
**Theme II:** Fertilization of agricultural soils and protection of the environment  
**Moderator:** Chambre de commerce, d'Industrie, d'Agriculture et de Services de Sotavento - CCIASS (Cap-Vert)  
**Interventions of Experts:**  
■ Directorate of Agriculture and Rural Development of ECOWAS  
■ ARAA - Regional Agency for Agriculture and Food  
■ Prof. Emeritus Othon Henry Leonardos - Researcher at the University of Brasilia
- 11:15 – 11:30 Debates  
11:30 – 13:00 Coffee break  
**Theme III:** The Agromineral Potential of Basalt and its specificities  
**Moderator:** Cape Verde Civil Engineering Laboratory  
**Interventions of Experts:**  
■ MSc. Magda Bergmann - Researcher of the Geological Survey of Brazil  
■ MSc. MSc. Andrea Sander - Researcher of the Geological Survey of Brazil  
■ Prof. Emeritus Peter van Straaten - Research Fellow at the University of Guelph - Canada  
■ Prof Jean Pierre Tchouankoue - University of Yaoundé - Cameroon
- 13:00 – 14:30 Debates  
14:30 – 16:00 Lunch  
**Theme IV:** Agricultural profitability and quality control of food produced  
**Moderator:** University of Cape Verde  
**Interventions of Experts:**  
■ FAO – Food and Agriculture Organization of the United Nations  
■ ENSA - National School of Agronomy of Yamoussoukro – Côte d'Ivoire  
■ Prof. Bernardo Knapik - Researcher at Estadual do Paraná University - Brazil
- 20:30 – 23:00 Debates  
Welcome dinner «THE FLAVORS OF ECOWAS»

**ROUND TABLE**  
**DISCUSSION GUIDE**

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Remarque: Certains des noms mentionnés sont encore en cours de confirmation.

## PARTICIPANTS

The «*Round Table on Integration and Debates*» will offer a relevant opportunity for dialogue between researchers of internationally recognized merit and high-level representatives of national and international institutions; those responsible for agriculture, environment and nutrition in the various countries; researchers; Universities and development agents in general.

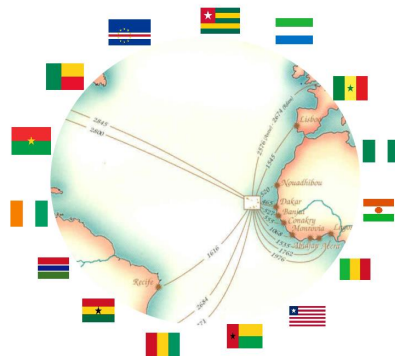
The «*Round Table of Integration and Debates*» will thus be open to all participants in the International Conference entitled «*BASALT CONFERENCE*» and to all other parties interested in this subject. Representatives of non-governmental organizations will also be invited to participate.

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## ROUND TABLE DISCUSSION GUIDE

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;
- b) 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;
- c) The different categories and types of nutrients that incorporate the chemical composition of basalt giving it the natural conditions of fertilizers;
- d) Public policies for scientific and technological research, legislative process, regulation and control of the use of basalt powder in agriculture;
- e) 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;
- f) The relationship between the use of rock powder in the fertilization of agricultural soils and the agricultural profitability and quality of the food produced;
- g) The types and qualities of agricultural soils likely to benefit and the potential for using the rock powder from the respective fertilization;
- (h) Trends in present and future development of the use of rock powder in agriculture;
- i) 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.



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## HOW THE DEBATES WORK

To allow dialogue between the participants of the Round Table, in each Theme, there will be two moments of interventions: a first moment is reserved for the members of the Panels who will carry out the respective interventions; and, after the interventions of Panel members, all participants will be invited to intervene.

The discussions will lead to a free exchange of experiences, lessons learned and good practices in the use of rock powder in the fertilization of agricultural soils, and an informal overview of the challenges facing the massive use of the soil rock powder in the fertilization of agricultural soils. These discussions will be animated dynamically in order to preserve their interactive character and will be managed by a Moderator who integrates the team of each Panel / Theme.

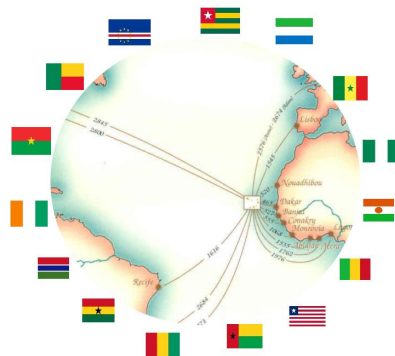
Participants will be invited by the moderator to make short interventions / comments, ask questions and respond to the experts, and not just read a pre-prepared statement, thus taking the form of a dialogue between experts and participants. The intervention of each participant must not exceed three minutes, in order to allow a maximum of participants to intervene.

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## PLANNED TEXT

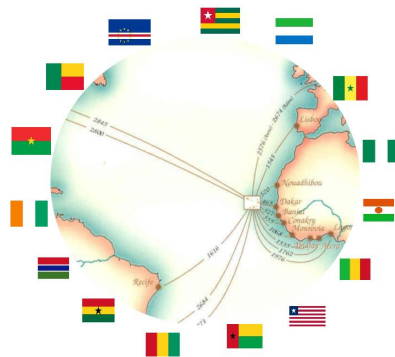
The Editorial Board will summarize the presentations and discussions during the Round Table and will be reproduced in the report of the International Conference. This document will serve as a guide for the work that will follow in relations with public, private and international institutions, with a view to the introduction of basalt powder in agriculture as a fertilizer in countries that may express their interest in this technology («Rochagem» technology).

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## DATE AND PLACE OF REALIZATION

The «*Round Table of Integration and Debates*» will be held in the Municipality of Ribeira Grande de Santiago, Cidade Velha, Island of Santiago, Cape Verde, on June 9, 2021, from 8:00 a.m. to 4:00 p.m., as part of the Conference Program International, titled «*BASALT CONFERENCE*».

## CIDADE VELHA – A BRIEF PRESENTATION

The city of *Ribeira Grande de Santiago*, better known as *Cidade Velha* (Old City), the seat of the municipality with the same name, is located about 15 km from the city of Praia, on Santiago Island. It has two parishes, *Santíssimo Nome de Jesus* and *São João Baptista*. Proclaimed in the 16th century, *Cidade Velha* is considered as the birthplace of Cabo Verde.

Founded in 1462, two years after the arrival of the Portuguese navigators on the island of Santiago, it was the first city built by the Portuguese in Africa and the first capital of Cabo Verde. The choice of the location - a deep valley, at the mouth of a river, called *Ribeira Grande* - as the centre of populate and establishment of a settlement was mainly determined by the abundance of water and facilities for agriculture. The terrain affected the implantation of the buildings, organizing the settlement in amphitheatre, oriented to the sea.

*Ribeira Grande* served as a base for the slave trade and for the supply of ships in its golden period, from the mid-15th century until the late 16th century, during which slaves from Africa to other parts of the world passed through its port, still maintaining some importance in the early seventeenth century, due mainly to the slave trade. Still in the fifteenth century, it was Vasco da Gama's port of call, on its voyage of discovery of the maritime route to India, and Christopher Columbus on his third voyage to America.

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## CIDADE VELHA – A BRIEF PRESENTATION

The frequent attacks of pirate ships especially of Francis Drake, led to the flight of the populations to the village of *Praia de Santa Maria*. With the end of the slave trade and the fact that it is located next to a swamp zone, exposed to many diseases, the navigators started to dock in the port of *Praia de Santa Maria*, now city of Praia. The *Ribeira Grande* declined, and in 1769 lost its status as capital. In 2005, with the reconstitution of the municipality of *Ribeira Grande de Santiago*, the city was once again proclaimed.

*Cidade Velha* preserves a significant number of buildings and ruins, as the oldest colonial church in the world, the Church *Nossa Senhora do Rosário*, built in 1495, in Manueline style. On May 10, 2009, it was classified by UNESCO as World Heritage of Humanity and, on June 26 of the same year, as one of the Seven Wonders of the World of Portuguese origin.

On January 31, 2012, near the mouth of *Ribeira Grande de Maria Parda*, the celebrations of the 550 Years of the Cabo Verde settlement were closed with the inauguration of a Memorial, offered by UCCLA (Union of Capital Cities of Portuguese Language). The work, by the sculptor Maria Luisa Alte da Veiga, is made in bronze and local stone, reproducing a caravel, the cross of the Order of Christ and the symbol of the Municipality of *Ribeira Grande de Santiago*. The Memorial has the following inscription: "Here they arrived, on May 1, 1460, the navigators António da Noli and Diogo Gomes, in the service of the Portuguese Infante D. Henrique, better known as Prince Henry the Navigator."

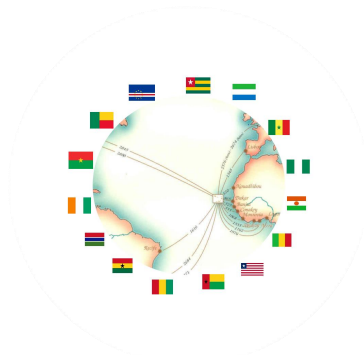


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## SITES OF TOURIST INTEREST

Pelourinho (Pillory), erected in 1512 or 1520. At this marble pillar rebellious slaves were punished publicly. It was restored in the 1960s. It stands at the main square of the city.

Forte Real de São Filipe, which dominates the city 120 meters above the sea level, was built in 1587-93. This fort was established as defence against the attacks of pirates and corsairs, mainly French and English.

The Church of Nossa Senhora do Rosário, the oldest colonial church in the world, built in 1495. It has a side chapel in Manueline Gothic style.

The ruins of the Sé Cathedral, whose construction started in 1556 and completed in 1705, have been pillaged and severely damaged by French pirates in 1712. Its impressive ruins (the church was 60 m long) have been conserved in 2004.

The ruined convent of São Francisco, built in 1657 on a slope outside the city centre. It served as a place of worship and formation. It was looted and damaged in the pirate assault in 1712. The convent church has been restored in 2002.

Many traditional houses can be found along the streets *Rua Banana* and *Rua Carreira*.

*Rua Banana*, which leads to the church, was the first street of Portuguese urbanization in the tropics.

The «Porto de Lamsqueiro», located in the town of Gouveia, was Cape Verde's first port. This Port has played a leading role in the past, namely through its use as an outlet for exports of 'purgueiras' and oranges that the municipality of Ribeira Grande de Santiago was once a pioneer producer.



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## CLIMATE

Cidade Velha has a hot desert climate. It has an average of 201 millimetres and an average temperature of 25.2 °C. The coldest month is January (average 23 °C) and the warmest is October (average 28 °C).

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# BASALT CONFERENCE

## ROUND TABLE OF INTEGRATION AND DEBATES

ATLANTIC  
BUSINESS ROUND

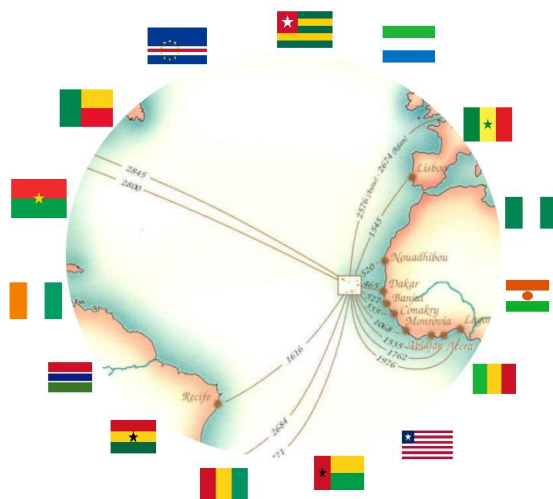
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PRAIA

SANTIAGO ISLAND

CABO VERDE



CONTACTS

**MESA REDONDA**

WhatsApp: +351 964 406 800

Viber: +351 964 406 800

Skype: emergys

info@basaltconference.com

www.basaltconference.com