

# Kuwait Biochar Initiative (KBI)

Dr. Hana'a A Burezq, Founder & Chairperson

KBI Newsletter Volume 2 No 2

June 2022

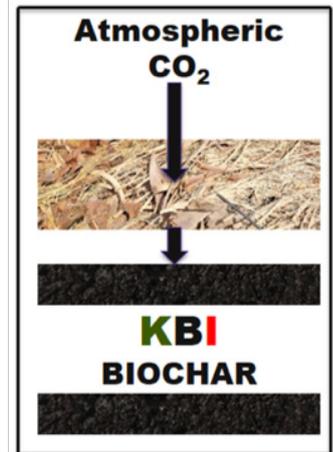
**KBI is Official Sustaining Member of International Biochar Initiative**

## KBI Chairperson Message at the Desertification and Drought Day 17 June 2022



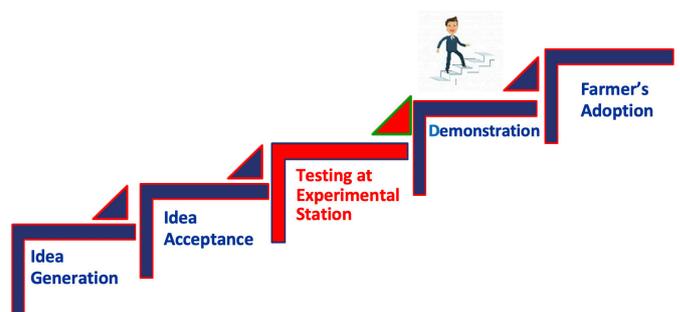
Dr. Hana'a A. Burezq  
Chairperson & Founder- KBI

**Kuwait Biochar Initiative** recognizes the need to celebrate Desertification and Drought Day on 17 June 2022. Every year a different theme is selected, and this year we have a special theme **'Rising up from drought together**. The global scientific community developed the consensus on the main aim to celebrate this day, is to find out achievable solutions for combating desertification, and to bring degraded soils back to provide sustainable ecosystem services, economic resilience, raise income and ensure food security. It is to be noted, that as per United Nations by 2025, about 1.8 billion people will suffer from absolute water scarcity, about 2/3 will be living under water-stressed conditions, and by 2045, 135 million peoples may be displaced due to desertification.



As Chairperson of **Kuwait Biochar Initiative**, I see the day from multiple contexts to find achievable solutions to combat drought, including but not necessarily limited to creating resilience in crop production systems by conserving water in the crops root-zone longer than it stays under normal conditions. This can be achieved by amending soil with organic soil conditioners such as biochar, which is highly sorbent, high surface area (reactive surfaces), high cation exchange capacity to retain nutrients and recalcitrant “resilient to microbial decomposition” and residence time in soil is over 1,000 years. What do we need, is to recycle potential organic feedstock (which ultimately ends in landfill) for biochar production through pyrolysis process, and adopt results from agriculture experiments on optimized dozes of biochar for various soil texture and environmental conditions under deficit irrigation system? In Kuwait, we are successfully progressing in saving 40% water and over 50% crops intensification using biochar and biochar based bio-fertilizers growing multiple forage crops. In addition, the carbon in biochar is stored in the soil for centuries, helping to restore fertility and mitigate climate change. Other components to address drought are, i) to screen genetic materials under different water stresses conditions and transfer the genetic materials to farmers, ii) recycle treated waste water to irrigate specific crops, iii) increase plantations “forests” to keep the environment cool, and fight against climate change induced global warming to avoid wild fires. Finally, I strongly recommend that we must join hands together to bring the resilient achievable solutions to fight against drought for ecosystem services and the food security. To achieve this goal, we must empower farmers to educate them with modern soil, crops, water and other associated technologies and connect them to market to achieve economic benefits.

In our efforts to further the 5 steps mission and vision of Kuwait Biochar Initiative we have took initiatives in Kuwait to Empower the farmers with biochar production and use technologies. We started two new on-farm projects, one to reduce methane emission from sheep enteric fermentation through integrating date palm based biochar in feed ration and the other project at farmers field in Wafra farming area to intensify open field vegetable production. The latter is based on the promising preliminary results from optimized biochar and biochar based biofertilizer forage production.



# The FIRST NATIONAL BIOCHAR FORUM ON BIOCHAR PRODUCTION AND USE IN AGRICULTURE INDUSTRY

The National Biochar Forum (NBF) will be the first event organized by the Kuwait Biochar Initiative (KBI). The KBI is an official sustaining member of International Biochar Initiative. The NBF is considered a climate positive and carbon neutral event, which will pave the forward to bring biochar production and use in the agriculture industry of Kuwait. The NBF will kick off one day in October, 2022 at Kuwait Institute for Scientific Research, featuring the goal, mission and vision of KBI as well as keynote presentation on global biochar research, biochar use experience in Kuwait and display of biochar based organic soil conditioners.

The NBF will be organized keeping in view of enormous impact of agriculture waste on the environment and resource wastage that can be brought into use for soil improvement, nutrient and water saving in agriculture industry for food security. At NBF we will share the progress of biochar production and use at national and regional levels. As the biochar production technology has been advanced from farm to commercial levels, the event will benefit a wide range of stakeholders, including scientists, policymakers and experts, farmers and agri-businessman as a platform for exchange of knowledge on the latest advancements in the forum theme.

## Global News Biochar Sector

### International Biochar Initiative

The International Biochar Initiative provides a global platform for fostering stakeholder collaboration, good industry practices, and environmental and ethical standards to support biochar systems that are safe and economically viable (<https://biochar-international.org/>) It is increasingly apparent that biochar is reaching atipping-point as we see continued growth both on the scaled-up production side, and also on the smaller-scale uses in the field and on smallholder farms.

**Kathleen Draper, IBI Chair of the Board**

### Beneficial effects of Biochar use in Sahelian and Saharan Zones (cf. Pro-Natura International) website ([www.pronatura.org](http://www.pronatura.org))

- **Date palm** (Local variety «Hmira», biochar @ 2kg/palm, the yield 200 kg/palm compared to the average of 70 kg without biochar.
- **Potato** - Without biochar 6 kg/m<sup>2</sup> & with biochar 12 kg/m<sup>2</sup>
- **Barley** - Without biochar 0.50 kg/m<sup>2</sup> & with biochar 1.2 kg/m<sup>2</sup>, 2 cycles per year
- **Durum wheat** - Without biochar 0.40 kg/m<sup>2</sup> & with biochar 0.9 kg/m<sup>2</sup>
- **Beans** - Without biochar 4.50 kg/m<sup>2</sup> & with biochar 9
- **Turnip** - Without biochar 3.50 kg/m<sup>2</sup> & with biochar 10 kg/m<sup>2</sup>
- **Celery branch** - Without biochar 25 celery/m<sup>2</sup> & with biochar 60 celery/m<sup>2</sup>
- **Courgette (Marrow)** - Without biochar 5.5kg/plant & with biochar 8 kg/plant.

## IPCC Climate Change 2022 & Biochar

Recently released The Intergovernmental Panel on Climate Change (IPCC's 2022) report, focused on the urgent scientific consensus for using carbon dioxide removal (CDR) to reach a 1.5°C pathway on a rapidly heating planet. Excerpts from IPCC 2022 with respect to biochar are given below:

Carbon dioxide removal (CDR) methods such as soil carbon sequestration and biochar can improve soil quality and food production capacity (Page-SPM-53). Improved and sustainable crop and livestock management, and carbon sequestration in agriculture, the latter includes soil carbon management in croplands and grasslands, agroforestry and biochar, can contribute 1.8-4.1 GtCO<sub>2</sub>-eq yr<sup>-1</sup> reduction (Page-SPM-43).

The removal and storage of CO<sub>2</sub> through vegetation and soil management can be reversed by human or natural disturbances; it is also prone to climate change impacts. In comparison, CO<sub>2</sub> stored in geological and ocean reservoirs and as carbon in biochar is less prone to reversal (Page SPM-48).

Source: IPCC (2022) Climate change 2022 Mitigation of Climate Change – Summary for Policymakers, Working Group III contribution to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change (WMO, UNEP). Pp. 63.

Biochar working miracle in agriculture, ploughing in the soil 0.3 to 1 kg of biochar per m<sup>2</sup> (3 - 10 tons/ha) increases crop productivity to levels that range from 50 to 200% in tropical zones ([www.pronatura.org](http://www.pronatura.org))

United Nations Climate Conference COP 27 (UNFCCC COP 27)

The Sharm el-Sheik Climate Change Conference from 6-18 November 2022, Egypt. Visit the COP27 Host country website.

Contact: Dr. Hana'a A. Burezq—Founder and Chairperson Kuwait Biochar Initiative  
email: [haborizq@kisir.edu.kw](mailto:haborizq@kisir.edu.kw) ; Tel: (24989786 (965+, Kuwait Institute for Scientific Research P. O. Box 24885 Safat 13109 Kuwait