



[\(<http://www.icarda.org>\)](http://www.icarda.org)

[Contact us\(<http://www.icarda.org/contact-us>\)](http://www.icarda.org/contact-us)

Search

- Stay Connected:

- 
- 
- 
- 

[About](#) [Research](#) [Capacity Development](#) [Publications & Resources](#)

[Home](#) > Managing Africa's Soils: the Road to Adaptation & Mitigation @COP22

## Managing Africa's Soils: the Road to Adaptation & Mitigation @COP22

Oct 27,2016



### Panel discussion: Planning for Africa's sustainable soil management at COP22

Africa's soils hold the key to its food production and economic future, with agriculture accounting for 30 to 40 percent of the continent's GDP. Food productivity on the continent is, however, plagued by soil degradation. As much as two-thirds of Africa's arable lands could be lost by 2025 from the aggravating impacts of climate change.

A group of global experts on soil and natural resource conservation, along with COP22 Scientific Committee members, met on the sidelines of COP22 in Marrakesh, November 13, to shape an agenda for sustainable management of Africa's soils. The goal was to discuss and agree on the major factors that will revive its soils and enable food security for Africa's people in the face of climate change.

The discussions, led by panelists and deliberated upon by audiences, led to a set of key outcomes that will inform the [Adaptation of African Agriculture to Climate Change or AAA Initiative](http://www.aaainitiative.org/), a concrete framework applicable to the entire African continent that will guide climate change action for all African countries.

### Driving Factors

Soils are a complex natural resource that require precise fertility and nutrient mapping in order to put in place a responsive soil management strategy.

Currently, a key gap holding back soil management in Africa is the **lack of continent-wide soil mapping and information database**. According to Prof. Tekalign Mamo, FAO Global Ambassador for the [2015 International Year of Soils](http://www.fao.org/soils-2015/en/) and expert from [Ethiopian Agricultural Transformation Agency](http://www.ata.gov.et/), "while there are international efforts by [FAO](http://www.fao.org/) and [ISRC](http://www.isric.org/) to produce soil maps, most countries are not investing in the activity, which is much needed to effectively address the challenges facing Africa's diverse soils".

The example of Ethiopia was cited as one of the few African countries that has successfully completed mapping and characterizing most of its arable soils, and is successfully applying the information to develop fertilizer management strategies at district and sub-district levels.

Fertilizers are a contentious issue that pit environmentalists against farmers' requirements – fertilizers emitting nitrogen contribute to greenhouse gas emissions, while they are also an essential source of nutrients for soils that can determine crop yields for farmers.

In Africa, **fertilizers are seriously under-used** at only 2 percent of global fertilizer use.

"The use of fertilizers must be increased in Africa to bring up the crop yields lagging behind from poor soils", emphasized Charlotte Hebebrand, Director General of International Fertilizer Association (IFA). Fertilizer is a knowledge-intensive product and knowing its four R's are critical pieces of information for managing nutrients – right source, right rate, right time, and right place. "Knowing these four R's will ensure that farmers can increase the uptake by crops and reduce the uptake by the environment," she said.

Along with nutrient management, an equally or perhaps even a more **critical role will be played by conservation agriculture** - the practice of zero-till farming and leaving crop residue behind that can naturally restore the balance of soils.

The role of soils was expounded upon to the gathering at the panel discussion by Prof. Rattan Lal, eminent soil scientist from Ohio State University, USA. "Soils are the engine of driving the AAA Initiative. Marginal soil management of soil will lead to marginal livelihoods," said Lal, underlining the need for sustainable soil management to be a deliberate agenda as part of food production and climate change planning.

African agriculture is at the cross-roads as countries are pursuing both intensification of production systems and sustainable land management in their Nationally Determined Contributions (NDCs) for climate action. "The AAA Initiative is framed to meet both these challenges with a combination of science, policy, capacity building, and investments," said Rachid MRABET, Research Director, INRA Morocco and Member of COP22 Scientific Committee.

While Africa is shaping its climate change adaptation plan, **international science and policy support** would be crucial in bolstering the steps taken by countries. Martial Bernoux, representing Climate Change Mitigation unit at FAO, outlined the efforts of FAO's [Global Soil Partnership](http://www.fao.org/global-soil-partnership/en/) to incorporate soil management as part of [IPCC's](http://www.ipcc.ch/) guidance to countries informing climate change decision-making.

## **Key Outcomes for AAA: Sustainable Soil Management**

**Consolidate and centralize soil maps and databases into a single point source, "Soil Information System for Africa"**. This step will be critical in targeting interventions, making strategic decisions on fertilizer inputs, and managing the resource optimally.

**Develop benchmarks for soil organic carbon across Africa.** Monitoring carbon changes in soils will guide effective restoration of soil health, ensuring that soils serve their multiple roles – meeting targets in carbon sequestration and advancing food and nutritional security in order to meet the UN's Sustainable Development Goals.

**A "tool-kit" for sustainable management of soils.** Science and technology advances with enabling policies that target balanced nutrient management, expansion of conservation agriculture (CA), and agroforestry systems, along with the use of indigenous knowledge, will be essential tools for tackling Africa's climate change challenges.

**Investments & supportive institutional mechanisms to "pay for" African soils' ecosystem services to the world.** An enabling environment through policy reform and smart incentives that reward farmers for contributing to global climate change mitigation through improved soils could be areas to consider in the implementation of AAA.

#### **Panel Expertise :**

Prof. Tekalign Mamo, ATA & FAO Special Global Ambassador for the 2015 International Year of Soils

Prof. Rattan Lal, Ohio State University, USA

Martial Bernoux, Natural Resources Officer (Climate Change Mitigation), FAO

Rachid Mrabet, Research Director, INRA Morocco and Member of COP22 Scientific Committee

Charlotte Hebebrand, Director General, International Fertilizer Association (IFA)

**Moderator:** Aly Abousabaa, Director General, ICARDA

The AAA Initiative, launched by the Moroccan Government, is built around core action areas of soil management, agricultural-water control, climate-risk management, capacity building and funding solutions thereof. The AAA Initiative aims to raise \$30 billion based on the outcomes and decisions made at COP22 to fund its implementation in adapting Africa's agriculture to climate change. ([www.aaainitiative.org](http://www.aaainitiative.org/)(<http://www.aaainitiative.org/>) )

*The event "Adaptation of African Agriculture – Sustainable and Resilient Soil Management" was co-organized by [ICARDA](http://www.icarda.org/)(<http://www.icarda.org/>), [INRA-Morocco](http://www.inra.org.ma/accueil1.asp?codelangue=23&po=2)(<http://www.inra.org.ma/accueil1.asp?codelangue=23&po=2>), [International Fertilizer Association](http://www.fertilizer.org/)(<http://www.fertilizer.org/>) and [CGIAR Research Program on Climate Change, Agriculture and Food Security](#).*

- 
- 
-

- [\(<http://www.icarda.org/update.xml>\)](http://www.icarda.org/update.xml)

[About Us\(<http://www.icarda.org/mission-and-vision>\)](http://www.icarda.org/mission-and-vision)

- [Contact Us\(<http://www.icarda.org/contact-us>\)](http://www.icarda.org/contact-us)

[Jobs\(<http://apps.icarda.org/iea/>\)](http://apps.icarda.org/iea/)

© 2017 International Center for Agricultural Research in the Dry Areas (ICARDA)

ICARDA is a CGIAR  
Research Center



[\(<http://www.cgiar.org/>\)](http://www.cgiar.org/)



[\(<http://creativecommons.org/licenses/by-nc/3.0/>\)](http://creativecommons.org/licenses/by-nc/3.0/)  
[\(<http://creativecommons.org/licenses/by-nc-nd/4.0/>\)](http://creativecommons.org/licenses/by-nc-nd/4.0/)