



Food and Agriculture Organization  
of the United Nations

# Boosting Africa's Soils

From the Abuja  
Declaration on  
Fertilizers  
to a sustainable  
soil management  
framework for  
food and nutrition  
security in Africa  
by 2030



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# Introduction

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In June 2006 in Abuja, Nigeria, the African Union Special Summit of the Heads of State and Government adopted the 12-Resolution “Abuja Declaration on Fertilizer for the African Green Revolution.” At the end of the Summit, the AU Member States resolved to increase fertilizer use from 8.0 kg/ha at the time to 50 kg/ha by 2015, which was coincidentally the International Year of Soils (IYS). African leaders declared fertilizer, from both inorganic and organic sources, “a strategic commodity without borders” and resolved that “the African Union Member States will accelerate the timely access of farmers to fertilizers”. Reports as of March 2015, show that average fertilizer use in Africa was still only 11kg/ha in 2014, equivalent to one tenth of the world average. At the same time, the recent Status of the World’s Soil Resources report established that 40% of African soils were subject to moderate to severe degradation.

The Abuja Declaration focused largely on increasing the use of fertilizers and creating an enabling regional environment in which to do so. However, there has been slow progress in achieving its targets; as well as an increasing understanding that focusing on fertilisers alone cannot boost Africa’s soils and their agricultural yields. There is growing consensus on the need to view soil fertility management in Africa from an Integrated Soil Fertility Management (ISFM) perspective that addresses the concept of integrated production systems in which healthy soils and their sustainable management are crucial to food security and agricultural sustainability.

The shift in widening the issue of soil fertility beyond fertilizer use through the adoption of sustainable soil management calls for high level policy commitment as highlighted in the revised World Soil Charter. This political commitment should build on the Abuja Declaration to address soil nutrient imbalances in a sustainable soil management framework for more resource-efficient, sustainable and economically-efficient production systems.

# Background

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Agriculture is the backbone of the African economy accounting for approximately 20% of the region's GDP, 60% of its labour force, 20% of its total exports and the main source of income for the region's rural population.



A germinating seedling in healthy soil  
©FAO/Rodger Bosch

It is in recognition of the key role of agriculture in ending hunger and eradicating poverty that African Leaders adopted the Comprehensive African Agriculture Development Program (CAADP) which calls for an average annual agricultural growth rate of 6%.

At the 23<sup>rd</sup> Summit of the African Union held in June 2014 in Malabo, Equatorial Guinea, African leaders adopted the Malabo Declaration on Accelerated Agricultural Growth and Transformation for Shared Prosperity and Improved Livelihoods which reaffirmed that agriculture should remain high on the development agenda of the continent. However, despite progress made on policy and investment to improve African agriculture, Africa as a whole remains largely food insecure. As of 2015 FAO<sup>1</sup> reports that: seven countries had achieved

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<sup>1</sup> FAO Regional Overview of Food Insecurity in Africa, 2015

both the Millennium Development Goal (MDG) 1.C of halving the proportion of the population suffering from undernourishment and the World Food Summit (WFS) target of halving the absolute numbers of the hungry; eleven countries had achieved the MDG target and made progress on the WFS target; while twelve countries made fair progress in reaching the MDG and/or WFS targets.

To achieve the agricultural growth and hunger and poverty eradication targets set under the Malabo Declaration, CAADP framework and the recently endorsed United Nation's Sustainable Development Goals (SDGs), it is necessary to significantly improve the productivity of Africa's soils which are currently severely degraded.



# Understanding the challenge: the african soil productivity crisis

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Soil erosion in Sub-Saharan Africa is considered one of the root causes of stagnating or declining agricultural productivity and the provision of further ecosystem services. Other related problems that reduce agricultural land productivity include soil organic matter depletion, soil nutrient depletion and loss of soil biodiversity. Soil fertility depletion and nutrient imbalances on smallholder farms is due to more nutrients being removed from the soil than replenished. Although Africa has 13% of the world's arable land and contains 12% of the world's population, unless these problems are addressed, many parts of the continent will suffer increasingly from food insecurity. Other key features that contribute to soil fertility decline are: complete crop removal from farmlands, unbalanced fertilization and little or no use of fertilizers.

***"We speak a lot of the importance of sustainable food systems for healthy lives.  
Well, it starts with soils, healthy soils."***

José Graziano da Silva | FAO Director-General



Farmers in Tanzania being trained on understanding from the soil condition of their fields  
©FAO/Marco Longari

Recent data from Africa Fertilizer<sup>2</sup> indicates that despite progress made, average fertilizer use in Africa was 11 kg/ha in 2014, still well below the Abuja Declaration target of 50 kg/ha and 10 times less than the world average. This figure was expected to reach 12 kg/ha by the end of 2015. While the trend is positive, there is clearly a long way to go to reach the 50 kg/ha target set in the Abuja Declaration. Today, the goal should not be to boldly increase the amount of fertilizer use, but to boost healthy soils as the main agenda item for many African countries.

**Table 1** | Status of Implementation of the 12 Resolutions at Country Level<sup>3</sup>

Indicator	Status
Establishment of policy and regulatory frameworks	Unsatisfactory
Capacity for quality control	Satisfactory
Elimination of taxes and tariffs	Unsatisfactory
Development of agrodealer networks	Satisfactory
Distance traveled to purchase fertilizers	Good
Increase in the proportion of farmers using chemical fertilizers	Good
Increasing market size	Partially satisfactory
Introducing targeted subsidies	Satisfactory
Introducing national financing facilities for importers and agrodealers	Good
Introducing regional procurement initiatives	Satisfactory
Improving access to complementary inputs	Satisfactory
Establishment of the AFFM	Unsatisfactory

<sup>2</sup> Africa Fertilizer is a joint initiative from The International Fertilizer Development Center (IFDC), FAO, The International Fertilizer Association (IFA) and The African Union Commission (AUC) to facilitate exchange of information about soil fertility, fertilizers and good agricultural practices in Africa.

<sup>3</sup> Status of Implementation of The Abuja Declaration on Fertilizers for an African Green Revolution [www.nepad-caadp.net](http://www.nepad-caadp.net)

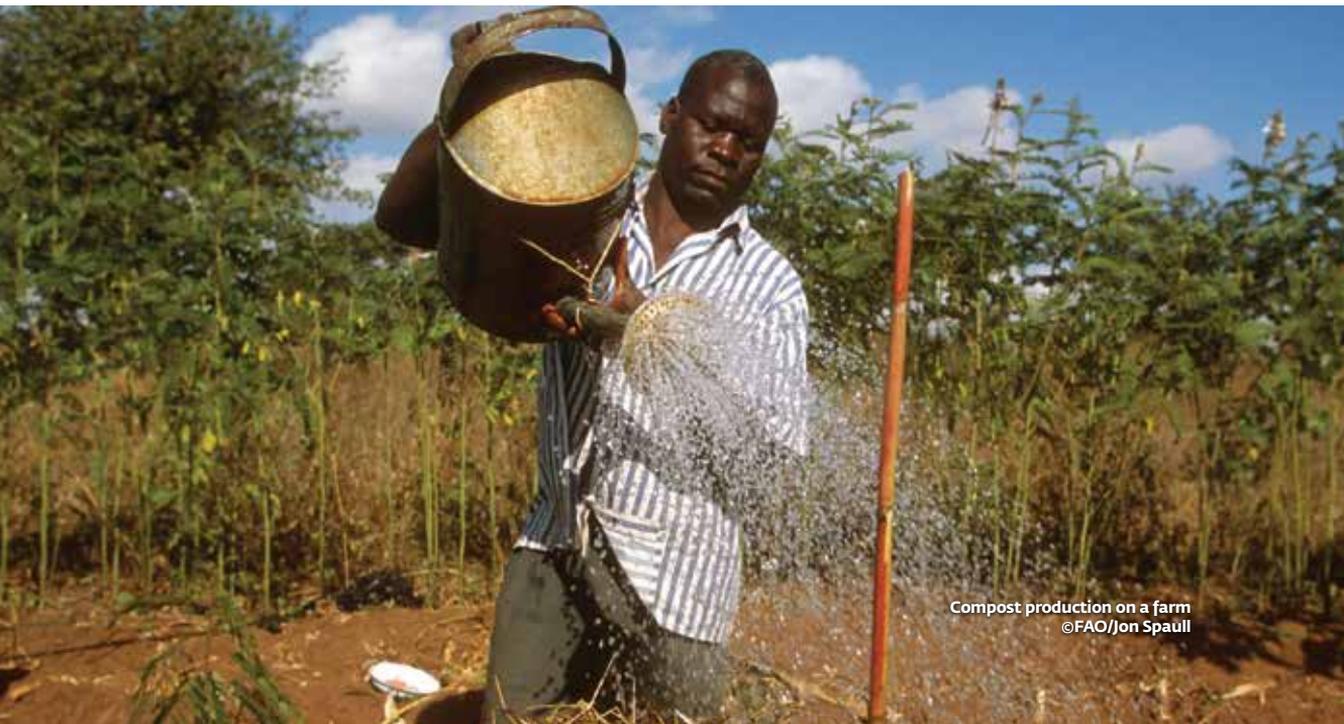
# Soils and the Sustainable Development Goals (SDGs)

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Of the 17 SDGs and their 169 associated targets, four SDGs contain targets related to soils and sustainable soil management.

Target 2.4 of SDG 2 on Zero Hunger calls for governments to “ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality”.

The sustainable use and management of terrestrial ecosystems, forests, mountains, land, biodiversity and soils is well articulated in the composition of SDG 15 and is specifically mentioned in target 15.3 which aims to combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world.



Goal 3 on Good Health and Well Being also has a soil related component in the form of target 3.9 to substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination. Goal 12 on Sustainable Production and Consumption specifically mentions in target 12.4 the need to achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment.



School children being taught the benefits of mulch application  
©FAO/Marco Longari

***“It can take 100 to 1000 years for a centimeter of soil layer to be formed naturally, yet a few seconds to lose that same amount.”***

José Graziano da Silva | FAO Director-General

Sustainable soil management is a pre-requisite for achieving the Sustainable Development Goals in the African context, particularly Goals 2, 3, 12 and 15. Goal 2 recognizes that food security and nutrition requires establishment of effective sustainable agricultural production, which, in turn, is impossible without maintenance of soil functions. Sustainable soil management practices are essential for ensuring stable or increasing production from arable lands, pastures and forestry systems (including agroforestry). Combating soil degradation and contamination requires introduction of sustainable soil management systems that address the challenges of Goals 3, 12 and 15.

Managing soils sustainably will result in wider benefits for achieving food security and improving nutrition, including food systems better able to adapt to and mitigate the effects of climate change, ecosystems with improved biodiversity, water quantity and quality as well as communities with increased and more stable incomes.

# Reviewing the Abuja Declaration commitments

To achieve the Abuja Declaration an action plan was rolled out which included development of agro-dealer networks across rural Africa, establishment of national agricultural input credit guarantee facilities, use of “smart” subsidies to ensure that poor smallholders have access to fertilizers, creation of regional fertilizer procurement and distribution centres, removal of trade barriers and promotion of local fertilizer production and establishment of an Africa Fertilizer Development Financing Mechanism by the African Development Bank. Table 2 below outlines each resolution and the corresponding progress and achievements on each to date.

**Table 2** | Abuja Declaration on Fertiliser: What has been achieved so far?

Resolution <sup>4</sup>	Progress/Achievements
<b>1</b> Increase the level of use of fertilizer from an average of 8 kg/ha to an average of at least 50 kg/ha by 2015.	Nutrient consumption per ha is still quite low with most countries falling far below the target of 50kg/ha and hence unsatisfactory progress made.
<b>2</b> Reduce the cost of fertilizer procurement at national and regional levels especially through the harmonization of policies and regulations to ensure duty- and tax-free movement across regions, and the development of capacity for quality control.	The cost of fertilizer has not reduced to affordable levels for small scale farmers. Progress with regard to introducing measures for quality control and eliminating taxes and tariffs on fertilizers is on track although development and implementation of fertilizer laws and supporting regulatory framework remains elusive.
<b>3</b> Developing and scaling up rural input dealers' and community-based networks.	There is registered improvement in the development and scaling up of agro-dealer networks.
<b>4</b> Address the fertilizer needs of farmers, especially women. Strengthen the capacity of youth, farmers' associations, civil society organizations, and the private sector.	The Women Accessing Re-aligned Markets (WARM) programme has contributed to addressing needs of women in agriculture. The private sector has been participating in training courses and workshops.

<sup>4</sup> <http://www.nepad.org/foodsecurity/knowledge/doc/1815/abuja-declaration-fertilizer-african-green-revolution>

<p><b>5</b> Targeted subsidies in favour of the fertilizer sector, with special attention to poor farmers</p>	<p>Targeted subsidies using input and price vouchers have been used in various countries with some level of success.</p>
<p><b>6</b> Accelerate investment in infrastructure, particularly transport, fiscal incentives, strengthening farmers' organizations, and other measures to improve output market incentives</p>	<p>The Programme for Infrastructure Development in Africa (PIDA) and the Africa50 Fund are key initiatives to address the development of regional and continental infrastructure. COMESA, SADC and EAC have a master plan in infrastructure improvement along corridors of trade.</p>
<p><b>7</b> Establish national financing facilities for input suppliers to accelerate access to credit at the local and national levels, with specific attention to women.</p>	<p>Agricultural credit guarantee systems are in place with credit guarantee schemes in existence in 77 percent of the Member States that were surveyed by NEPAD in 2012. Mechanisms of risk transfer and diversification for importers and agro-dealers alike have been introduced.</p>
<p><b>8</b> Establishment of Regional Fertilizer Procurement and Distribution Facilities</p>	<p>There has been an increase in the number of fertilizer blending and production plants while existing ones have been scaled up.</p>
<p><b>9</b> Promote national/regional fertilizer production and intra-regional fertilizer trade</p>	<p>Bulk blending plants have been established. The level of fertilizer trade between and among Member States has increased considerably.</p>
<p><b>10</b> improve farmer access to quality seeds, irrigation facilities, extension services, market information, and soil nutrient testing and mapping to facilitate effective and efficient use of inorganic and organic fertilizers, while paying attention to the environment.</p>	<p>There are a relatively high number of farmers that have access to quality seeds although those employing crop protection products have reduced. Farmers are able to access information in various ways and land under irrigation has expanded.</p>
<p><b>11</b> Establish, by 2007, an Africa Fertilizer Development Financing Mechanism that will meet the financing requirements of the various actions agreed upon by the Summit.</p>	<p>Hosted and managed by the African Development Bank (AfDB), the Africa Fertilizer Development Financing Mechanism (AFFM) was established in March 2007. However, it is not yet legally operational as the financial commitments made by Member States are yet to be met.</p>
<p><b>12</b> Set up a mechanism to monitor and evaluate the implementation of the Declaration</p>	<p>A mechanism to monitor and evaluate the implementation of the Declaration was set up by the AUC which has been giving progress reports to the African Heads of State since 2007.</p>

In assessing the status of implementation of the action plan several barriers were identified which have slowed the progress at national and regional levels. These include: financial constraints impeding the functionality of the AFFM; insufficient number of agrodealers; ineffective fertilizer laws; unconducive investment policy environments; undeveloped market infrastructure; imposition of fertilizer taxes and tariffs; limited access to finance and subsidies; inadequate agricultural research and development; poor extension services; and overall low investment on sustainable soil management practices.

These barriers clearly need to be overcome by:

**(i)** stimulating fertilizer demand and supply toward increased soil nutrient replenishment under a sound sustainable soil management approach;

**(ii)** capacity development to improve crop management skills of farmers and reorientation of extension messages to match farmers' needs considering the diverse agro-ecological systems and socioeconomic conditions of the communities;

**(iii)** enhancing output-market linkages;

**(iv)** combining organic and inorganic inputs;

**(v)** developing recommendations for effective and efficient use of fertilizers that account for soil type and nutrient status, crop requirement and that take into consideration local knowledge and practices;

**(vi)** investing in agricultural research so that fertilizers and the methods of fertilizer application match well with soil characteristics, plant physiology, environmental conditions and social context, and that improvements to fertilizers and their application are produced using all this information;

**(vii)** collecting up-to-date, reliable data and information on levels of soil degradation and fertilizer needs.



***“Mixing one third each of water, organic matter and minerals does not give soil:  
Soil is a living resource and needs to be treated as such.”***

José Graziano da Silva | FAO Director-General

These aims can only be achieved within the context of a sustainable soil management approach to ensure that soil systems are able to perform their natural functions and provide the ecosystem services that are fundamental for sustainable development in Africa.



Soil samples being analysed in a soil laboratory  
©FAO/Simon Maina

# Widening the scope of the Abuja Declaration

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Based on current understanding of soil functions, as well as a more integrated approach to natural resources management, there is need to widen the scope of the Abuja Declaration perspective. This will be instrumental in taking better consideration of the approaches and needs of African farmers under the umbrella of the Sustainable Development Goals.

For this positive shift, a number of actions need to be considered: **(i)** soils need to be managed from an integrated production systems perspective in which healthy soils and their sustainable management are key, and focus is on their sustainability and diverse uses; **(ii)** soils have a natural function to regulate water and cycle nutrients and as such, the better the condition of the soil, the better it is able to perform these functions; **(iii)** healthy soils which are high in organic matter content, well aerated and have good structure can increase the efficiency of fertilizer use by plants due to a healthy environment within the root zone of plants where nutrients are taken up; **(iv)** soils should not be considered in isolation but as part of an evolving landscape subject to human pressure and chemical pollution, with the increased and inappropriate use of herbicides for example, and natural catastrophes such as floods, landslides, drought, and pest outbreaks.

Seizing upon the legacy of the International Year of Soils, there is an important opportunity for revisiting the Abuja Declaration and strengthening it to promote sustainable soil management as an important vehicle for achieving food security and nutrition, climate change adaptation and mitigation, the provision of ecosystem services, and overall sustainable development in Africa.

Soils should be considered as a living resource that requires an integral approach for its management and as such its health should be boosted in order to provide those ecosystem services that enable life on earth.

# Key messages to transform the Abuja Declaration on fertilizers to a sustainable soil management framework for food and nutrition security in Africa by 2030

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- Africa's soils are under threat as 40% are under degradation, especially due to soil erosion, soil nutrient depletion, soil organic matter decline as well as soil biodiversity loss.
- Progress on the Abuja Declaration has been slow over the last 10 years and there is need for a paradigm shift in the way that soils are managed in Africa so to to accelerate Africa's agricultural growth.
- There is need to widen the scope of the Abuja Declaration to better reflect the relationship between soils and ecosystems, the needs and socio-economic contexts of African farmers as well as the Sustainable Development Goals (SDGs).
- Implementation of the Abuja Declaration should move beyond increasing fertilizer use and creating an enabling environment, to promoting Integrated Soil Fertility Management (ISFM) and other sustainable soil management practices, with a high level policy commitment for more efficient and economic production systems as stated in the World Soil Charter.
- There is need for renewed political commitment from governments and RECs in Africa to deliver on the commitments made in the Abuja Declaration, setting a new timeline and targets for implementation. The critical role of increased and balanced fertilizer use in increasing food production needs to be reaffirmed and policy solutions developed accordingly.
- High level political commitment could be attained through the holding of a High Level Ministerial Conference on Fertilizer in the context of Integrated Soil Fertility Management as a follow up to the Abuja Conference, in order to review progress for each country and sub-region and agree on new targets and milestones for boosting Africa's soils.
- There is need to raise awareness among farmers, private sector and policy makers on the need for a paradigm shift in the way that Africa's soils are managed so as to incorporate not only fertilisers but also the concept of sustainable soil management.

- There is need to ensure financing and operations of the AFFM so as to be able to carry out its mandate of enhancing sustainable agricultural production.
- Monitoring and Evaluation of Abuja Declaration implementation needs to be strengthened and a monitoring mechanism is needed to actively and regularly monitor implementation.





Manure is collected and applied on corn fields  
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