

## **SCIENTIFIC DAY - 4 NOVEMBER 2019**

### **PROGRAM**

The four panels gathered by the AAA scientific committee will present and discuss during the scientific day the four following themes: “soil”, “water”, “risk management” and “finance”. It is expected to develop specific actions following the meeting, toward promotion and implementation of tangible projects on these themes.

#### **Panel 1. Soil Health and Climate Change Adaptation in Africa**

Soil health and climate change are intrinsically linked. On the one hand, soils are the second largest carbon sink after oceans. On the other hand, rising temperatures and changing precipitation patterns can lead to soil erosion, fertility loss and a decline in soil’s ability to secure food production. There is a growing and long-standing recognition among both policy-makers and soil specialists that soil degradation is one of the root causes of declining agricultural productivity in Africa and that, unless the process of degradation is controlled, many parts of the continent will suffer increasingly from food insecurity. Unfortunately, there is no consensus on the exact extent and severity of soil degradation or its impacts in Africa as a whole. Lack of soil information and knowledge is considered to be one of the foremost obstacles for reducing land degradation, improving agricultural productivity, and facilitating the adoption of sustainable land management among smallholder farmers.

There is an urgent need for proactive interventions to arrest and reverse soil degradation in this continent. Current soil management practices may not be robust enough to deal with the impacts of climate change, whereas sustainable land management practices may improve carbon sequestration in the soil. In recognition of the importance of the sustainable management of soils and increased sequestration of carbon to the soil, Morocco launched the AAA initiative. This initiative is in synergy with other initiatives (e.g: 4pour1000) to increase the awareness about those non-renewable resources.

This panel aims to highlight the importance of the soil in the development of sustainable solutions for climate change adaptation in Africa, particularly in agriculture, and calling for a synergy between different initiatives on the sustainable management of soil. Indeed, the panel aspires to answer the following questions:

1. How climate resilient soil management in Africa can improve soil adaptation capacity to climate change in support of food security?
2. Would a soil information system developed for Africa contribute to the best soil management practices for adaptation to climate change?

3. Can precision agriculture tools be implemented in Africa and can they contribute to Africa adaptation to climate change?
4. What are some of the other pertinent initiatives that can leverage AAA programs toward Africa adaptation to climate change?

## **Panel 2. Enhancing food security through building water resilience in Africa**

Climate change is affecting all countries, but Africa will be particularly hit in terms of food security, water management and extreme weather phenomena such as droughts, floods and cyclones. Africa is characterized by a low adaptive capacity that is reflective of the current state of water management, with the result that the number of victims from disasters is relatively higher than in other regions. Both climate variability and climate change must be tackled alongside the other factors that make-up water insecurity on the continent.

Climate projections and hydrometeorological records provide abundant evidence that water resources are vulnerable and can be strongly affected by climate change, with wide-ranging consequences for human societies and ecosystems. Robust projections of these models imply decreasing water availability in northern and southern Africa regions, and increasing water availability in eastern equatorial Africa. So dry regions will become drier and wet regions will become wetter. Adaptation strategies will differ.

Water security is both an increasing concern and an imperative for sustainable agriculture development and food security in Africa. Africa's utilisation of its available water resources remains at a very low 5% due to limited investments in water resources development and management. Africa's water infrastructure deficit is a serious challenge to the continent's socio-economic growth prospects. Investment levels have been, so far, inadequate. The African governments should promote an enabling environment, including appropriate legislation, public-private partnerships, community involvement and economic incentives that will foster water infrastructure development for food security and sustainable growth.

This panel aims to highlight the importance of water in Africa and aspires to answer the following questions:

1. What are the key issues in building water resilience in Africa and what significant regional differences exist?
2. What is the role of water infrastructure in mitigating natural disasters, enhancing socio-economic development and sustaining ecosystems?
3. Why is an integrated approach to building the resilience of freshwater resources so important for Africa?

4. Food security is in part ensured by appropriate irrigation development. What is the scorecard and what is the picture across Africa of good practice to be emulated, small or large scale?
5. How should African countries address the potential impacts of growing human pressures, ecosystem declines and climatic influences on water resilience and food security?
6. How can we build stronger and more effective partnerships between the public and private sectors to build Africa's water security?
7. How do we build capacity at the regional, national and local levels to address the issues that confront Africa in water security?

### Panel 3. Climate Risk Management: Agricultural Insurance in Africa

All economic activities are subject to various sources of hazards. Agriculture is subject to many risks, in particular climatic hazards and price volatility on the markets. These risks lead to relatively high variability in terms of crop production and income. In the face of climate risks, two strategies are generally implemented:

- The first is to act in the prevention of climate change, through ex ante actions that avoid or limit variability in production. Different agricultural techniques make it possible to be less dependent on the climatic conditions: no till systems, irrigation and drainage, use of crop varieties adapted to the local environment, integrated pest management, fight against soil erosion, etc.
- The second strategy is to act in response to a climatic hazard to compensate for the loss of income related to the decrease in production. The intervention can be public (for example: compensation during a natural disaster) and / or private (for example: crop insurance).

Prevention is not enough; it is necessary to be downstream of the risk to limit its impact on the income of the farmer. Risk management strategies fall into three categories: risk can be assumed, transferred or managed. Nevertheless, in recent years, an increasing number of pilot programs in Africa have introduced agricultural insurance (including index-based insurance) to manage the covariant risk (a risk affecting a large number of people at the same time) in the agricultural sector.

On the strength of its successful experience in Morocco, Mutuelle Agricole Marocaine D'Assurances (MAMDA) has supported African countries in the development of agricultural insurance. Thus, since 2016 cooperation agreements have been signed in the framework of South-South cooperation with eight African countries (Côte d'Ivoire, Rwanda, Tanzania,

Madagascar, Nigeria, Ghana, Burkina Faso and Zambia). Many challenges specific to the African context must be overcome. As such we can mention for example, the depth and quality of yield and / or weather data, the absence and / or reliability of meteorological stations, the state budgets limiting the subsidy to premiums and the structuring of the agricultural insurance ecosystem (organization of insurance, existence of cooperatives, etc.). The combination of the weight of agriculture in African economies and the devastating effects of disasters on agricultural production will lead to the inevitable use of insurance as an efficient means of risk mitigation and rural finance development.

This panel aims to highlight the importance of agricultural insurance in Africa and aspires to answer the following questions:

1. What is the interest of African countries in developing agricultural insurance in the context of climate risk management?
2. What are the challenges to take up to set up this type of product?

#### **Panel 4. Financing the adaptation of African agriculture**

In Africa, agriculture accounts for between 25% and 70% of Gross Domestic Product in most countries and employs over 70% of the labor force, mainly in small family farms. Despite this major socio-economic role, agricultural productivity remains below that of other regions of the world and this deficit is worsening in the face of the effects of climate change. In order to encourage farmers to adopt improved technologies and practices needed to increase agricultural productivity, improve resilience to climate change and generate more income, there is a need for increased investment in the sector. This requires increased public investment as provided for in the Maputo Declaration, but also better access to private financing, including banking. Indeed, a major constraint farmers face in investing in the sustainable management of their land is the lack of access to finance since only 6% of African farmers benefit from bank credit. Several factors contribute to this situation: fragmentation of farms, multiplicity and diversity of financing needs, lack of guarantees and insurance, lack of organization of agricultural sectors, etc.

However, despite the complexity of financing agriculture, Morocco has convincing experience: with the Morocco Green Plan, Morocco has strengthened, modernized and diversified its agriculture, relying in particular on the access of farmers to bank financing. A leader in the sector for nearly 60 years, Crédit Agricole du Maroc has set up an innovative system that has helped finance more than 30% of Moroccan farmers regardless of their size or risk profile. This system is based in particular on the complementarity between the traditional commercial bank, "Tamwil el Fellah", a subsidiary of agricultural mesocredit and the ARDI Foundation, a subsidiary of rural microcredit, complementarity which allows to cover all the financing needs of the farms to develop their projects.



Thus, funds mobilized internationally through the AAA Initiative can be redeployed and distributed to their ultimate beneficiaries, i.e. farm managers of varying sizes and characteristics empowering them to invest in climate smart agriculture.

Tested for a decade and enjoying international recognition, this unique model is suitable for African countries whose agricultural sectors are, for the majority of them, facing the same challenges as for Morocco. Aware of the urgency of the climate issues and partner strongly mobilized within the AAA Initiative, Crédit Agricole du Maroc has undertaken to share its expertise in Africa, in the field of agricultural financing in order to support the development of projects for the adaptation of agriculture to climate change across the continent. Moreover, in addition to bank financing, many impact funds have emerged in recent years, in perfect alignment with the desire of investors, to generate not only a return on financial investment but also to create value for farmers, especially for the youngest among them, and promote the development of sustainable agriculture (LDN Fund, etc.).

This panel aims to highlight the importance of financing AAA programs in Africa and aspires to answer the following questions:

1. What are the interactions and complementarities among different financial operators?
2. What are the mechanisms to maximize synergies and strengthen adoption by African farmers of sustainable and resilient practices?