National Alliance of Stakeholders in the Cereal Seed Sector in Morocco

Multi-stakeholder workshop report

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Authors: Boubaker Dhehibi (ICARDA), Mohamed Boughlala (INRA-Morocco), Rachid Mousaddek (ICARDA-INRA), Ahmed Amri (ICARDA), Kamiljon Akramov (IFPRI), Michael Baum (ICARDA)
On the 1st March 2023, the Institut National de la Recherche Agronomique – Maroc (INRA), the International Center for Agricultural Research in the Dry Areas (ICARDA), and the Ministry of Agriculture of Morocco (MAPMDREF), organized a multi-stakeholder workshop "National Alliance of Stakeholders in the Cereal Seed Sector in Morocco". The agenda of the workshop is provided in Appendix 1. High-level policymakers, including Mr. Aziz Abdelali, General Director of the Société Nationale de Commercialisation des Semences (SONACOS), a national seed marketing company, Mr. Belfadla Driss, President of the Association Morocaine des Multiplicateurs de Semences (AMMS), Dr. Faouizi Bekkaoui, Director of INRA and Dr. Abdelaziz Yasri, General secretary of INRA, attended the workshop (Table 1). More than 20 representatives of various stakeholders attended the workshop, including officials from the Ministry of Agriculture and agencies, researchers and non-governmental and non-profit organizations, and representatives of international organizations.

**Context and Objective of the Workshop**

Since the 1980s, several varieties of cereals, jointly developed by INRA and ICARDA, have been disseminated and cultivated on a large scale and have contributed to improved agricultural productivity and nutrition security. However, during the last decade, the new varieties of bread wheat and durum wheat locally developed have encountered problems of diffusion and adoption by Moroccan farmers and it was observed that most of the genetic material currently used by farmers is imported from abroad and is very sensitive to stress that the climate scenarios predict for North Africa in general and Morocco in particular. This workshop aims to discuss the concrete measures that must be taken by the various stakeholders in a harmonized and coordinated manner to accelerate the dissemination and adoption of new resilient varieties of cereals developed locally.

*Table 1. Organisations participating in the multistakeholder workshop*

<table>
<thead>
<tr>
<th>Organisation</th>
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<tbody>
<tr>
<td>L'Association Morocaine des Multiplicateurs de Semences</td>
<td>AMMS</td>
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<tr>
<td>La Confédération Morocaine de l’Agriculture et du Développement Rural</td>
<td>COMADER</td>
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<td>International Center for Agricultural Research in the Dry Areas</td>
<td>ICARDA</td>
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<tr>
<td>Institut National de la Recherche Agronomique</td>
<td>INRA</td>
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<tr>
<td>Ministère de l’Agriculture, de la Pêche Maritime, du Développement Rural et des Eaux et Forêts</td>
<td>MAPMDREF</td>
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<td>Office National du Conseil Agricole</td>
<td>ONCA</td>
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Opening session

The opening ceremony of this workshop was marked by the speech of the Director of INRA Morocco, Dr. Faouzi Bekkaoui, who made it clear that this workshop is part of the CGIAR Initiative on Fragility to Resilience in Central and West Asia and North Africa (F2R-CWANA) project and constitutes the culmination of a long process of collaboration between INRA and ICARDA who are striving to support the Moroccan Generation Green 2020-2030 strategy and to achieve the objective of increasing from 30% to 50% the rate of use of certified seeds by Moroccan farmers by 2030. The Director of INRA pointed out that so that our farmers can have access to resilient varieties adapted to local environmental conditions, INRA and ICARDA are launching this multi-stakeholder workshop with key players in this sector to discuss the main institutional, political and technical challenges in this area and form an innovation platform or Alliance that will contribute to the sustainable transformation of agri-food systems in the cereal seed sector in Morocco.

Mr. Aziz Abdelali, General Director of SONACOS, made a point of specifying that this workshop must lead to concrete and achievable actions and reduce the time given to presentations to focus on the discussion and the development of a roadmap to promote the national seed sector, given that SONACOS markets more than 90% of certified seeds of cereals and legumes in Morocco. Given the international context and the importance of laying the foundations for food security, he said that SONACOS remains open to market both foreign varieties and varieties developed in Morocco to serve the interests of farmers better. He also insisted on the fact that given the importance of preserving the identity of the seed and the long process of variety testing and release, the shortage of certified seed is much more difficult to fill. Indeed, if for consumption cereals the origins are relatively numerous and easily substitutable, the number of suppliers capable of supplying specific certified seeds already approved are relatively limited.

The President of AMMS, Mr. Belfadla, welcomed the holding of this workshop and thanked the organizers with the wish to see this type of meeting multiply to discuss the future of the seed sector in Morocco. However, Mr. Belfadla made a point of specifying that all the efforts
made by research and the good achievements obtained (case of No-Tillage system and new cereal varieties) do not reach farmers and main reason for that is the lack of massive and aggressive communication program to inform user communities about national genetic progress. Similarly, Mr. Belfadla recalled that old INRA varieties dating from the 1990s are still in demand by farmers and remain unavailable on the seed market. He made a point of specifying that the research should forge close links of collaboration with the seed multipliers widely followed and considered by the community of farmers.

Dr. Ahmed Amri of ICARDA reminded the audience of the importance of holding this workshop for his institution and the shared concern of his institution to identify the causes of the low adoption by farmers of the genetic progress that characterizes new varieties. This low adoption rate undermines the purpose of research and the justification for investment in research programs. Especially since Morocco was chosen by ICARDA as a research platform serving in terms of transferable research results.

Before the start of the presentations session, Mr. Aziz Abdelali invited the participants to focus the work of the workshop on a frank and direct discussion to lead to a saving roadmap for this sector of great importance and to ask themselves the question: **Why don't we break through despite the genetic progress made?**

**Presentation session**

**Dr Rachid Moussadek & Dr Amri**

*Theme: Presentation of the new OneCGIAR ICARDA-INRA Initiatives (Fragility to Resilience in CWANA (F2R-CWANA), Excellence in Agronomy, Climate Resilience, etc.) to strengthen the resilience of the cereal sector in Morocco*

Dr. Moussadek recalled that the CGIAR group has implemented several new Initiatives grouped in three areas of action: systems transformation, resilient agri-food systems and genetic innovation. He clarified that the “Fragility to Resilience in Central and West Asia and North Africa (F2R-CWANA)” initiative aims to build resilient agri-food systems in the region, primed to withstand the effects of climate change and generate better livelihoods for rural communities. He also added that this initiative will serve to provide options for climate adaptation and mitigation that respond to, and are effective for, smallholder farmers in CWANA with a view to scaling up and out the best bet solutions. It recognizes the richness of the unique biodiversity
of this centre of origin of many species, and it shall promote its conservation of soil, ecology and water resources in-situ and ex-situ. It takes into account the complex political interactions between the region’s countries, and it must bridge the borders to bring out widely deployable technologies. The F2R-CWANA initiative includes five work packages. The WP1: “Innovations in partnerships, policies and platforms for the efficient, inclusive and climate resilient transformation of agri-food systems” focuses on policy and socioeconomic issues in the agri-food sector. Dr. Moussadek mentioned that from previous research, we learned that enhancing the capacity of researchers and organizations can come through policy outcomes and innovations and key factors that enable or constrain results. Building on this, WP1 will bring together National Alliances of Stakeholders and National Innovation Platforms as key drivers for agri-food system transformation. Dr Moussadak made a point of highlighting that the great fragility of agricultural production systems from which Morocco suffers is similar to several countries and that one of the solutions recommended by research is to work in close collaboration with key partners to have a positive influence on the decision-making process.

Dr Mohamed Boughlala

*Theme: Importance of the Strategic Alliance for the cereal sector*

Dr. Boughlala showed in his presentation that strategic alliances are cooperative agreements between two or more partners to work together and share resources to achieve convincing and promising results to build resilient agri-food systems in Morocco. Likewise, he made it clear that for an alliance to be considered strategic, the partners must value the partnership as an important tool in their overall policies and manage it accordingly. He also pointed out that for any “Win-Win” alliance, the first step is to start with a strategy, not a partner, and ensure clarity of core capabilities, trade-offs and strategic priorities. He insisted on the key drivers behind good alliance execution which are as follows:

- Strategy first
- Invest in the initial planning
- Create trust between partners
- Start with small objectives
- Good reporting of the process

He stressed the importance of communication between partners to establish and maintain trust and that trust begins during the negotiation process and depends on the partners’ ability to adjust to each other to achieve a consensus. He added that it is crucial to develop also key performance
measures and to have a clearly defined reporting framework that tracks alliance performance and allows partners to track progress. Dr. Boughala concluded his presentation with a word from Richardson of Adventure Capital saying "As big as your dreams are and as smart as you may think you are, you can't do it alone."

**Dr. Moha Ferrahi**  
*Theme: Seed multiplication program and varietal map at INRA*

Dr. Ferrahi reported that cereals in Morocco occupy around 75% of arable land and represent about 45% of the total agricultural production value. The commodity’s contribution to the Moroccan GDP is 13%, while providing 38% of the total national employment. The sector also provides indirect support for 60% of the population and generates an export revenue of roughly 25%. He also added that until the early 20th century, cereal cropping in Morocco was dominated by barley- followed by durum wheat and at the turn of the 20th century, bread wheat was introduced into Morocco by the French colonizers and in the 1980s, there has been an increase in both bread and durum wheat areas, while the considerable increase in bread wheat areas is, essentially, the result of intensified policies pursued by the government.

He stated that in Morocco, the average wheat consumption per inhabitant is 220 kg/year, i.e., three times more than the world average and that the average barley consumption per inhabitant is 31 kg/year, i.e., the world’s largest consumer of barley - affirming that cereals and their by-products are among the basic food products of Moroccans.

With regard to the improvement of cereal yields in Morocco, Dr. Ferrahi reported that between 2003-2019, the yield per hectare in cereals increased by 42%, from 12 to 17 quintals\(^1\). Production, for its part, increased by 25%, rising from 64 million quintals (between 2003 and 2007) to 80 million quintals (between 2015-2019). Despite this improvement in cereal yields, the country does not produce enough for self-sufficiency, and between 2014- 2019, local production only covered on average 54% of national cereal needs (wheat, corn, barley). He showed in his presentation that the major constraints of cereal crops in recent years are the high frequency of years of drought and high temperatures, the low use rate of new varieties and certified seeds which is barely around 20% and the lack of an objective strategy to achieve cereal sovereignty in Morocco.

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\(^1\) 1 quintal = 100 kg
Dr. Ferrahi informed the audience that some studies in Morocco have shown that the adoption of new wheat varieties leads to an increase in grain yield of about 482 kg/ha (49% increase), an increase in net income of 1,324 Moroccan Dirhams (Dhs)/ha (48% increase) and an increase in human consumption of about 29.6 kg/capita/year (60% increase). Dr. Ferrahi argued that the cereal seed sector in Morocco has made significant progress over the years. This progress has made it possible to provide this sector with high quality plant material with a good genetic heritage, and an appropriate regulatory and institutional framework with dynamic participants (private operators, associations and organizations of producers).

Dr Ferrahi noted that despite the progress made, weaknesses and risks still persist upstream and downstream of this sector. Among these limitations he cited the weakness of national varietal creation through breeding programs and consequently the risk of dependence on varieties of foreign origin; the partial diversification of the varietal profile and the absence of a varietal map adapted to the contexts of the agro-ecological regions of Morocco; insufficient business planning and seed stock management; inefficiency in the management of the customer relationship and in the integration of the users of the seed products in the design of the breeding programs, in particular the agricultural producers, the millers, etc.; and the difficulty of setting up the Seed Aggregation Project. He added that research must imperatively identify the obstacles to the low adoption of INRA varieties by farmers despite their high number and that only 4 to 5 varieties are widely adopted and cultivated in Morocco. Without concealing the problem of the transfer of new INRA varieties which remain unresolved despite their performance, for example the case of the variety “NACHITT”, obtained in 2018 and not yet transferred.

At the end of his presentation and in order to improve the performances of this sector, Dr. Ferrahi made the following recommendations:

1. Strengthen varietal selection programs within INRA, in collaboration with ICARDA, with a view to establishing partnerships between these two institutions and the structures in charge of seed multiplication and marketing;
2. Accelerate genetic progress by reducing the selection cycle;
3. Integrate the preferences of users of seed products (farmers, processors, industrialists, etc.) into breeding programs;
4. Reinforce programs to promote new varieties to users;
5. Create a national strategic alliance bringing together players in the seed sector (supply) and those coming under the Interprofessional Federation of Cereal Activities (FIAC) and demand to take advantage of synergies and complementarities (technological and/or commercial) and to optimize opportunities for sector development.

Dr. Abdelaziz Yasri

**Theme: Promotion and transfer of research results on cereals by INRA**

Dr. Yasri presented succinctly with key figures and ratios the process of valorization and transfer of research results on cereals and the conclusive efforts of INRA to amend the statute of INRA to integrate the subsidiaries as a strategic option with high agricultural stakes to provide farmers, producers, multipliers with innovative solutions and help them to sustainably enhance their production and land.

**Discussion session**

At the end of the presentations, the discussion session began in a frank and direct atmosphere. Suggestions, recommendations and observations by stakeholders are as follows:

**SONACOS Representatives**

Mr. Aziz Abdelali, Director General of SONACOS emphasized the following points:

- The farmer freely chooses the variety that he considers will best meet his needs, and therefore SONACOS must always offer him a basket of varieties to better manage his risks. This basket must be diversified and must constantly evolve (withdrawal of varieties not requested, launch of new varieties) to make the best genetics available to farmers.

- For variety introduction: It is important to segment the market for more effective communication about new varieties. The message and medium should be tailored to the target audience (multipliers vs lead farmers vs small farmers). The choice of the entry point for the varieties must be reasoned according to the available resources and the expected impact on other farmers (leaders vs followers) (information day, simple electronic message, etc.).

- In the context of climate change conditions, given that 95% of cereal production is under a rainfall system, the introduction of the variety must be reasoned over several years
(medium and long term) to be able to establish and confirm its superiority for the farmer and decide its maintenance, and/or its exit.

- In a context of variable climatic conditions (95% of cereal production under a rainfall system), the introduction of the variety must be reasoned over several years (medium and long term) to be able to establish and confirm its superiority for the farmer and decide whether it is maintained at the market level or abandoned.

- The strategic alliance can be very beneficial and must be established in consultation with the existing professional seed organization AMMS and the National Interprofessional Federation of Seeds and Plants which must be attached to any strategic alliance.

- Make use of the comparative benchmarks that farmers use today to decide which variety to use. Indeed, in most cases, farmers make their decisions on the basis of comparison (observed or reported) of performance between varieties. As such, INRA/SONACOS/ICARDA can develop simple comparative guides highlighting the relative superiority of the varieties to be promoted and distribute them electronically on a large scale and at a lower cost.

- The importance of ensuring regular production of basic seed, since the recurring interruption of supply greatly harms the variety and exposes it to replacement by other available varieties.

**AMMS Representatives**

Mr. Belfadla, President of the AMMS, invited INRA to no longer present the genetic progress of its varieties in its demonstration platforms through small plots but to show this progress through large areas and large-scale trials among pilot farmers and seed multipliers. And for better consultation, he suggested that a meeting be held in a month and to meet at least once a year throughout the duration of this project.

Mr Bouanani of AMMS assured that the real judgment of a new variety depends essentially on good communication to better promote the newly obtained varieties. And to speed up the process of registering new varieties, he recommended that each INRA regional research center undertake this process at its regional level. Similarly, he specified that the amendment of INRA’s statutes to have commercial subsidiaries, long advocated and proposed by AMMS, would greatly contribute to promoting new varieties obtained by INRA.
Also, he raised the question of the retrocession of the varieties granted to the seed companies that are not commercialized.

**ICARDA Representatives**

Dr Amri from ICARDA recalled that genetic progress no longer needs to be demonstrated and testifies to this by the large number of multipliers/producers who use and adopt certain varieties obtained from INRA and this for many years. At the same time, Dr. Amri invited the audience to try to provide answers to these 2 fundamental questions:

- What is the process that determines the choice of a variety?
- When is the best time to show a new variety?

Dr. AMRI specified once again that to promote new INRA varieties, it is necessary to make them known to users and to offer them the possibility of comparing them with foreign varieties. And to respond to the proposal made by the audience to offer the varieties requested and demanded by users, he invited the participants to decide on the best approach to study the demand for new varieties.

Dr. Moussadek, insisted that to overcome the phenomenon of the obsolescence of a variety, due to the long certification/registration process which requires 7 years, to be inspired by the French model of certification which lasts only 3 years. He also specified that the principle of the witness established for the evaluation of varieties must be dynamic and evolving and not static (n -1, n -2, etc.). To pass from G2 to F1, the minimum duration is 7 years as well and recalled that the approach adopted by the USA consists of registering in the official American catalog only varieties with sufficient stocks for their distribution.

**INRA Representatives**

Dr. Abdelaziz YASRI, General Secretary of INRA specified that to ensure the dissemination of research findings and their wide adoption by farmers, he recommended using the Followers paradigm Baseline of any strategy of influence. A strategy that remains very important despite the time it requires for its application and its very high cost. He also indicated that it is preferable in any INRA variety promotion policy to be limited to a single promising and efficient variety and to test it with a farmer as a control farmer.
Dr Imane Thami Alami, Head of the Scientific Division at INRA indicated that the concern for sovereignty and food security must be placed at the center of the debates of this workshop in order to find concrete and concerted solutions and this is in accordance with the Green Generation strategy 2020-2030.

Dr. Ferrahi assured us that INRA did not stop the multiplication of "KARIM" and "ACHTAR" varieties without consultation with SONACOS. Similarly, he indicated that to have the necessary seeds to meet the demand of farmers to go through certification before the registration operation to better promote a new variety. In view of the current situation (total dependence on rainfall) and in order to be able to satisfy SONACOS demand for new varieties and to avoid their unavailability, it is necessary to support INRA to have irrigation systems in all research stations in order to avoid the risk of drought. Similarly, he recommended creating new companies in parallel with SONACOS to speed up the process of disseminating new INRA varieties.

Dr. Jilal of INRA recommended that to show the genetic progress achieved, it is desirable to install demonstration plots at the level of seed multipliers farms in addition to the trials carried out at INRA research stations. Also, he proposed to cover the geolocation tools "GPS" to designate potential farmers for a wide dissemination of the genetic progress of INRA and through them we can reach large numbers of farmers.

Dr. Boughlala asked for an in-depth review of the terms and conditions for the transfer of varieties, to have mechanisms to remove a variety from the Official Catalog and to combine efforts to publicize and share the genetic progress achieved with farmers. Obtaining varieties without having data and insight into the real needs of farmers leads us to revise downwards the number of varieties registered each year by INRA. In this regard, he wondered whether we should limit the demonstration trials to 1 to 2 varieties and invited the audience to define exactly the role of SONACOS in the process of promoting new INRA varieties.

**Recommendations**

At the end of the debates, Dr Bekkaoui summarized some recommendations to be included in the roadmap, namely:
• Address the problem of basic seeds availability and the delay in getting newly produced varieties to users and establish the approaches to be adopted to deal with the process from Production to Farmers.
• Use new communication platforms, in particular via digital means.
• Define the mechanisms to reduce the number of varieties to be produced per year with a definition of their potential for Resilience, Resistance and Productivity.
• Review the structure and content of the INRA New Variety Guides to provide useful and direct information to farmers based on figures and concrete yield comparisons.
• Study the mechanism to eliminate and remove old varieties that are no longer required from the Official Catalogue.
• Develop the basis of comparison (the control) in genetic progress.
• Undertake behavioral trials with INRA partner seed producers and multipliers (therefore participating in increasing the areas sown by INRA varieties and ensuring wide promotion of their intrinsic qualities).
• Conduct a study on the demand for new varieties of cereals in Morocco.
Appendix 1. Multi-stakeholder Workshop Agenda

Workshop "National Alliance of Stakeholders in the Cereal Seed Sector in Morocco"

- Agenda -

Date: Wednesday, March 1, 2023, 9:30 a.m.
Venue of the meeting: ICARDA Headquarters, INRA Guich, Rabat

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>09h30</td>
<td>Registration of participants and welcome coffee</td>
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<tr>
<td>10h00</td>
<td>Official welcome of participants and opening remarks, INRA/ICARDA</td>
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<tr>
<td>10h00</td>
<td>Rachid Moussadek / Ahmed Amri, ICARDA: Presentation of the new ICARDA-INRA initiatives (F2R-CWANA, EiA, ClimBer, etc.) to strengthen the resilience of the cereal sector in Morocco.</td>
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<tr>
<td>10h15</td>
<td>Mohamed Boughlala, INRA: Importance of the Strategic Alliance for the cereal sector.</td>
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<tr>
<td>10h30</td>
<td>Moha Ferrahi, INRA: Seed multiplication program and varietal map at INRA.</td>
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<tr>
<td>10h45</td>
<td>Abdelaziz Yasri, INRA: Promotion and transfer of research results on cereals by INRA.</td>
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<tr>
<td>11h00</td>
<td>Plenary discussion</td>
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<tr>
<td>11h00</td>
<td>• Institutional and political constraints of the cereal seed sector in Morocco;</td>
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<tr>
<td>11h00</td>
<td>• Mapping important innovations in the sector;</td>
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<tr>
<td>11h00</td>
<td>• Identify the constraints for the adoption of new INRA varieties;</td>
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<tr>
<td>11h00</td>
<td>• Strategies for promoting new INRA varieties.</td>
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<tr>
<td>12h30</td>
<td>Conclusion and recommendations</td>
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<td>12h45</td>
<td>Lunch</td>
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