

Morocco Learning Route

Final Report

july 2022

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1. Abstract

The Morocco Learning Route (MLR) was conducted from 20 to 25 June 2022. It was a knowledge management key for the best practices learning and sharing, focusing the whole chain of innovation. The MLR was a means to exchange knowledge between peers, here usually farmers, rural development practitioners, academics, researchers, stakeholders and decision-makers. The designed program of the MLR considered several SDGs including the SKIM thematic areas especially the institutional KM process, The natural resource management, the agriculture and livestock productivity and the gender and youth equity. Six case studies were discussed, visited and evaluated. The case studies were located in different regions in Morocco which differs from their climate and soil conditions, economic development and agricultural specialties. All project partners participated. The ICARDA project coordinator, one participant from IFAD, one from IAM Bari, seven participants from Sudan, and six from Moldova. The participation of Moroccans team was also significant as all partner institutions and some stakeholders also contributed in the MLR. We counted the participation of eight Moroccan professionals. Through the MLT evaluation, the participants find the MLR 95% very interesting in relation to their expectations. some positive recommendations and opinions were also expressed.

The six case studies were:

Case study 1: Institutional arrangements in knowledge management for Moroccan agricultural sector: IAVH2, ONCA, INRA, ENA

Case study 2: Successful Operation of APIA, a national company for the promotion of local Products: notably honey and cosmetics products

Case study 3: Bridging the gaps between academic research and practical farming

Case study 4: Genetic resources conservation: a tool for sustainable agricultural development

Case study 5: Community engagement and entrepreneurship in agriculture (incubators, startup creation; agribusiness master)













Case study 6: Development of the value chain of the aromatic and medicinal plants in the Marrakech-Safi region

1. Agenda









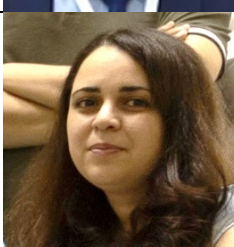

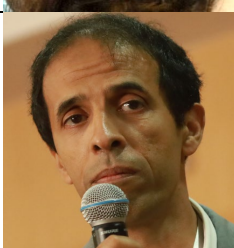

Day	Time	Activity	City
19 June	To confirm by foreign participants	Participants reception at the airport and transfer to a hotel in RABAT (Onomo Terminus) Dinner in the Hotel	Rabat
	08h – 09h	Breakfast (Hotel)	Rabat
	09h -11h	Welcome ceremony in INRA Rabat (Dr. Bekkaoui Faouzi - The Director of INRA Morocco). <u>Case study 1: Institutional arrangements in knowledge management for Moroccan agricultural sector: IAVH2, ONCA, INRA, ENA. (10 min per speech)</u> <u>40 min: case study 1 discussion with coffee break.</u>	Rabat
	11h30-13h30	Departure Rabat-Kenitra	
20 June	14h-15h30	Visit of APIA Company (honey and cosmetic products) (Mrs. Mohssine El Hassania-IAVHII) <u>Case study 2: Successful Operation of APIA, a national company for the promotion of local Products: notably honey and cosmetics products</u>	Kenitra
	16h-18h	Visit red fruit farm (Mr. Abouabdelilah Aziz-ENA-Meknes) <u>Case study 3: Bridging the gaps between academic research and practical farming</u> 1h: farm visit <u>40min: case study 3 discussion</u>	Larache
	09h30-11h30	Departure to Ouazzane	Ouazzane
21 June	11h30-13h30	Visit to Apia cooperative (IAV HII Mrs. Hassania). <u>Case study 2: Successful Operation of APIA, A national company for the promotion of local Products: notably honey and cosmetics products</u> <u>40 min : Case study 2 discussion.</u>	Ouazzane
	15h -17h	Departure to Chefchaoune	Chefchaoune
	Since 17h	Free time for visiting heritage site and discovering rural local products	Chefchaoune
	09h30 – 12h30	Visit of provincial agricultural directory (Derived cosmetic and medicinal products from Cannabis – Mr. Amine Karama – Chefchaoun DPA Director) (Chefchaoune)	Chefchaoune

2h: for discussion of 3 case studies (summary) [need room for 25 persons]			
	14h30 – 18h30	Departure to Rabat	Rabat
23 June	10h-11h	Visit of the genetic bank (Mr. Sebbata Othmane- INRA).	Settat
		<u>Case study 4: Genetic resources conservation: a tool for sustainable agricultural development</u>	
	11-12h30	Departure to Benguerir	Benguerir
	14h-17h 30	Visit of the University Med VI polytechnic de Benguerir (Mr. Dahbani Ahmed and Mr. Soulimani Adnane-UM6P)	Benguerir
		<u>Study case 5: Community engagement and entrepreneurship in agriculture (incubators, startup creation; agribusiness master)</u> - Visit of women cooperative: Extension services benefiting to Women empowerment in agriculture (ONCA)	
		60 min for Case study 4 and 5 discussion	
	17h30 – 18h30	Departure to Marrakech	Marrakech
	Since 18h30 -	Free time for Visiting heritage old Medina and Koutoubia building and discovering handcrafted products	Marrakech
24 June	09h30-17h30	Visit of the Marrakech cluster for aromatic and medicinal products” Marrakech, Health & Beauty Valley” - Presentation of Menara cluster and CAIAC (Mrs. Kaoutar Filali- Director of cluster Menara). - Presentation of the women cooperative for apple valorization “Tifaouine” (Ms. Khadija Bach) (IFAD-funding)	Marrakech
		<u>Case study 6: Development of the value chain of the aromatic and medicinal plants in the Marrakech-Safi region</u>	
		2h discussion of 3 case studies (summary) recap.	
25 June	08h30 – 13h30	Departure to Rabat	Rabat
	14h30	Free time for Visiting Hassan, Rabat old medina	Rabat
26 June	To confirm by foreign participants	Departure to airport	Casablanca

2. List of Participants: 58% Males and 42% females

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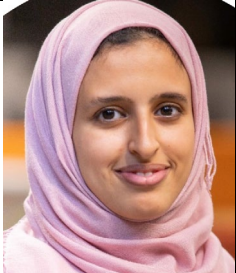

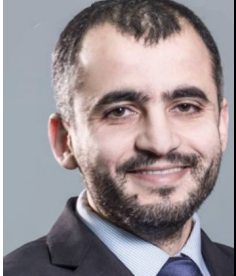





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3. Case studies summaries

3.1. Case study 1

The discussion opened with a reflection over the knowledge sharing along SKIM Moroccan partners and other stakeholders of Morocco. They emphasized that the goal is to provide knowledge and examples of thematic cases, and they highlighted that this SKIM project is the fruit of their collaboration. The Moroccan partners claimed to be aware of a coordination and collaboration at the national level. In addition, they also collaborate at the international level with European and other African countries. An example, presented by INRA, would be the soil fertility map, developed by Moroccan experts and brought to some African countries via the Moroccan phosphate group in order to provide a basis for a thorough understanding of their land soil and their demand for agricultural fertilizers. Moreover, they acknowledged the need to work in a collaborative group and the benefit of cooperating with national and international organizations with similar interests and goals. Thus, since each of the IAV, INRA, ENA and ONCA belong to the same ministry and share the same strategy, they must collaborate. The ENA representative also mentioned that no agenda goes first, but they have a strategy to follow. They now have a green working plan which is about new generation green.

Research is one of IAV, INRA and ENA goals, but regretfully, they do not have enough budget and thus submit proposals in order to obtain funding. For instance, they might collaborate on a project and align the academic research objectives with ONCA's extension services to promote best practices. As a result, they work together at every level to educate students and teachers and train trainers (ONCA professional, farmers, and administration staff). Additionally, they plan seminars for various groups, including the scientific community, farmers, and ministry of agriculture staff members. ONCA agricultural advisers are laureates of schools such as ENA of Meknes, IAV, and other agronomic training institutes, with the primary mission of knowledge dissemination. The former hold agreements with those research and information institute and carry out particular actions,

such as frequent awareness days when they invite experts and instructors from ENA or IAV to animate these activities of agricultural advice.

The second part of the discussion revolved around the ARDNA app developed by ONCA. It is a bilingual (Arabic and French) digital platform for agricultural guidance and agri-advisory communication. Since the app's primary goals are farmers, rural women, and other demographics, Arabic makes it more available to them. It is also accessible to students, researchers, and all actors in agricultural development. The platform will contain researchers' publications, end-of-study dissertation publications, results, guides, and agricultural advice publications in easy Arabic. Hence, it is a platform that adheres to everyone interested in training and agricultural knowledge.

Youth entrepreneurship is a major project first launched by his majesty the king as a vital axis of green generation. Two years ago, ONCA launched two large projects of agricultural entrepreneurship for technical assistance, production, and project development for young agricultural entrepreneurs. The support and accompaniment of the youth through five phases serve as a summary of their efforts. They conducted seminars at the regional and national levels throughout the project's conceptualization phase. Specialists and experts develop each concept the youth express into a solid project. Thus, the inventiveness of creating these business ideas for young people to give them a project to set up may be summed up as ONCA's goal. Moreover, it has no connection to FORSA as the latter is at the bank level. They proceed to FORSA once the idea has been thoroughly researched and developed.

The three schools of agriculture engineering, IAV, ENA and ENFI, are under the umbrella of agriculture and higher education ministries. ENA was founded before the IAV and was once a part of it, but they are now separated. There is currently a proposal underway to merge the three institutions into what would be known as the polytechnic school of agriculture. This is due to the need for academics. Since several academics have retired, it would be advantageous to merge the three institutions so that professors may teach at IAV and ENA without repeating courses. It is an ambitious project that started in 2001 but is still merely on paper due to the ministry's several structured projects and the government's regular change every four years. As a result, the project is not a top priority for the government. Each institution has its curriculum and personnel; thus, the government may not see the need for such a polytechnic school. The professors, on the other hand, see it as a dream. They have diverse curricula but also many parallels, and with such a polytechnic school, they believe they can improve their national and international projects and concepts.

The discussion then moved to tackle the background of people doing extension services. The Moroccan partner explained that at ONCA, they have engineers from ENA and IAV. At IAV and ENA in the last two years, they have the option of rural development engineering, where they can study involvement techniques and how they can transfer the information to farmers. They have an agronomy background in the first two years, and in the last two years, they focus more on how to be linked to and connect with farmers.

The discussion then moved to the level of each organization, and how they promote their strategy to different donors. IAV, as an institution of research and academy, has funds from the agriculture ministry; to pay the salaries, buy the scientific materials, and equip the laboratories. Additionally, they have the direction of cooperation and partnership responsible for looking for national and international calls. Moreover, they have a national center for research and technology, which issues a call for participation in a research and development project each year. At the national funding level, it is occasionally sponsored by this center and other times by partners like OCP, Sherifian phosphate offices, or some ministries like the Ministry of Industry. Furthermore, they have access to some international funding that aids in a lab setup and the dissemination of research and development findings. They also have a partnership with the office of intellectual property for the researcher who wants to do some inventions for patents. Their IAV-level administration, which is more structured than ENA since they have a system to follow for the projects, also supports them.

On the other hand, ENA has a research director who organizes, monitors, and follows all the research activities. They also get funding from the Ministry of Agriculture as well as an ENA fund research project for researchers. Furthermore, when promoting their ideas, they proceed as follows: Following the announcement of the call, they seek a researcher who specializes in that particular area since they need someone to brainstorm with, write down, and present their proposal to all the partners. They can, however, get in touch with a research structure directly and offer their proposal if they have a new concept.

A quick discussion of the primary donors marked the panel's conclusion. It was stated that it is not at the institution level like INRA, IAV, and ENA but more at the governmental level. There are two kinds of partnership—a bilateral partnership between Morocco as a country and other countries and a multilateral partnership within institutions.

3.2. Case study 2

The visit began by a speech of APIA Director to present APIA (APiculture Agriculture) as a family structure, cooperative and also one of the biggest companies for the valorization of natural products. The cooperative was initiated 25 years ago. In the 1990s, the family decided to create a food market that would support the local community and meet the needs of Moroccan consumers. They committed to relying on exceptional quality from local producers, artisans, and farmers following the model of “fork to farm” agriculture. Today we succeeded the opening 14 stores in Morocco. The Director present one of the important challenges that consist to establish a business model guarantees quality for our consumers and affordable prices. As a result, this helps to gain the trust and loyalty of the consumer. The cooperative has been able to combine BtoB and BtoC practices over the years. It continues to support small farmers through services, training, and mentoring. Apia supports the beekeeping value chain. The company is a supplier of beehives, bee colonies, various beekeeping tools, and equipment. The APIA engineers provide practical training in the field of beekeeping. Currently, APIA has ten beekeepers and 2 arborists on site.

The Co-director of APIA was exposed the adopted strategy to increase the cooperative and to involve their outcomes. In this sense, he highlighted the benefits and the deals to engage

a national and international quality certificate. APIA is engaged to certify all products. ISO22000 for food products, and ISO22716 for cosmetic line. All APIA products are approved for exports according to FDA and ISO. In addition, the local certification is available with more than 15 local agreements and authorizations from the ONSSA (Office National de Sécurité Sanitaire des Produits Alimentaires). The cooperative purchase raw materials locally and limit the number of intermediaries. Furthermore, APIA developed a new concept of restaurant based on local products use to promote the ecotourism in the rural region of Ouazzane.

Scientific research and innovation techniques had greatly contributed to solving several problems such as the technical problem and also to find solutions or new products in face of the market competitiveness. For example, Actually, Morocco has experienced a massive bee extinction. Many beekeepers have suffered a loss of 40% of their bee populations and were forced to stop their activities. APIA participate with the ministry, academics, and researchers to find solutions of this colonies collapse.

3.3. Case study 3

The visit began by an oral presentation of Berry-Nova farm. The establishment of the farm was in 2018 when three Engineer from IAV. They came together and decided to start a berries farm in the region of Larache. All three of them are agricultural engineers so passionate about farming. So, they have chosen to cultivate raspberry. In the first year, the farm area was 5 hectares of land they rented and cultivated with two red raspberry varieties: Adelita and Lupita. In the second year, 3,6 hectares of adjacent land were added to the farm, from which 2,5 hectares were cultivated with strawberries, the rest of the surface was cultivated with two 38 different varieties of red raspberries: Yazmin and Maravilla. In the third year, the surface dedicated to strawberries decreased by 1,5 hectares in favor of raspberry while keeping the same varieties as the previous year.

Bridging the gap between the academic researches and the practical farmers that was not easy in the foundation when the three engineers started the project. Especially with two biggest problems. In the one hand, the competitiveness of the strawberry and the razzberry was important in the region. The second problem was the money deficient to involve the farm and to satisfy the internal needs.

So, for the beginning, the first deal was the identification of a good profile to manage the farm with a good academic background for helping the team to solve the technical problem. The second deal consisted to ensure a visibility and the promotion of the farm. In this case, the promotion of our product is mainly ensured by our partners such as Driscoll's, which provide the plant materials and manages the relationship with the European market. As for the local market, we receive potential buyers to whom we present our fruit; thus, we negotiate the selling price based on fruit quality, and quantity. As for knowledge management, the farm established a system of collecting and documenting every operation executed on the farm. Technical and managerial decisions were made following an organizational structure. Furthermore, being a part of large network of berries farmers in the region, Berry-Nova was continuously kept in touch with the team in order to share valuable organizational insights, successful experiences, and failures and to reduce

redundant work. To strengthen the competitiveness, the farm switched to the digital farming by using new smartphone apps for storage management, labor management and irrigation scheduling.

3.4. Case study 4

As part of the case study concerning the conservation of genetic resources, the MLR participants visited INRA research center in Settât (160 km south-east of Rabat). The visit began by the presentation of the INRA Settât and the genebank vocations. We attended three presentations. The first one exposed the Settât center and its missions. A second presentation focused on the basic concepts of genetic resources and finally a last presentation on the gene bank, its purpose, strategy, missions, visibility, etc.

Based on the Three presentations, we have raised the following information: The research activities of the gene bank at INRA are generally structured in five areas, including acquisition, characterization/evaluation, maintenance, use and management of collections. The prospecting, collection and conservation of genetic resources are justified by the desire to counteract the loss, potential or actual, of genetic diversity on the field. This may be reflected in the disappearance or scarcity of old local races or old varieties that are supplanted by modern high-yielding varieties. After prospecting and collecting genetic resources, characterization and evaluation related to the traits of interest is the first step in the exploitation of genetic variability. The objective is to optimize their management, conservation and use in breeding and genetic improvement programs. Genetic resources stored in gene banks lose their viability, and their quantity decreases over the years. It is therefore imperative to multiply and/or regenerate the stored germplasm to ensure its conservation at acceptable levels. In terms of collection maintenance, Settât gene bank has regenerated almost 40% of its stock since 2003. The main multiplied species are cereals and food legumes. Information related to conserved germplasm, both that of identification (passport), storage and that generated by characterization and evaluation is always voluminous, varied and complex. An information system is an unavoidable tool for the management of all generated data within the framework of the legal regulations and in compliance with the standards of traceability of exchanges.

A visit was realized in the gene bank office where Dr. Ali Sahri, who is responsible for the gene bank and the coordinator of genetic resources conservation network at INRA, gave explanations on the technical aspects concerning this facility and the objectives of conserving accessions to prevent the genetic erosion that affects all plant species due to climate change and the pressure exerted on their habitats. On the sidelines of the meeting, a discussion was held on the technical aspect related to the conservation aspects, the plant protection, and the cooperation with other national and international institutions.

3.5. Case study 5

The proposed visit aimed to define the university and its main activities in agricultural sector including innovation and the entrepreneurship aspects. The team of 5 students from the university have taken charge the visit guiding of all the participants into the laboratories, the workshop rooms, the digital library and others mainly part of the university. As a definition, the UM6P is a non-profit private university with its main campus

located in the 1000 hectares of Ben Guerir "Green City" near Marrakesh, a major urban development project to create a model city of sustainability. UM6P's entrepreneurial learning is embedded through the existing master programs and the launch of new ones dedicated exclusively to agribusiness, which benefits from shared infrastructure and resources and expertise. the new generation university has five founding principles: applied research, innovation and entrepreneurship, addressing Africa's socio-economic development challenges, adopting a partnership approach, openness to the world with a national focus, social equity and merit.

The university is composed of 11 semi-autonomous schools, grouped around four major research clusters, which are: SCIENCE & TECHNOLOGY CLUSTER HUMANITIES, ECONOMICS & SOCIAL SCIENCES BUSINESS & MANAGEMENT CLUSTER MEDICAL & PARAMEDICAL CLUSTER Among these schools, ESAFE (School of Agriculture, Fertilizers and Environmental Sciences) is the agricultural education flagship of UM6P, known for the uniqueness of its curriculum related to knowledge of fertilizer and soil fertility alongside the entrepreneurial and leadership programs such: Innovation hours: A hybrid program dedicated to studying fundamentals of innovation management and strategic thinking. Each student is required to design and launch an innovative project during the course Open Lab hour: program that allows students free access to multiple laboratories on Friday afternoon to conduct tests and experimentation on their prototypes. Experimental Farm Access: "Learn by farming" approach offers project holders students allocated plots to develop their prototyping.

we attended very interesting presentations of some Startups that excelled. Explorer, U-Founders, Emmyor are some examples of these Startups. In fact, the UM6P native startups' ecosystem reflects the pluri-disciplinary scientific & technological curricula of the schools linked to the university, the laboratory facilities, the platforms, the research capacities, and the global network. The UM6P ecosystem is perceived as the pipeline of knowledge/ideas for incubation and speeding up the transition from lab to market. The full range of programs covers the specific needs of the startup life cycle from ideation to scaling up stage.

The visit was successful through the level of presentations, the richness of information and also the new face of a university that shines in Africa and in the world in all areas that provide another definition of the Knowledge management.

3.6. Case study 6

The last visit concerned the cluster innovation mechanisms supporting women's cooperative, helping their empowerment and inclusion in society. The cluster named "Menara cluster" is a Moroccan professional association specialized in the luxury industry agri-food and cosmetics. It has around a hundred members between industries, research centers applied, universities and state institutions. The Menara Cluster was labeled by the Ministry of Industry as part of its support program for the creation and development of industrial clusters. Founded in 2012 with the ambition to consolidate and improve the competitiveness of the cosmetics industry and agri-food, Moroccan in the national and international markets via a triple dynamic: Creation of value at the local level (Morocco), Recruitment and incubation of start-ups, and supporting Moroccan companies to conquer

international markets. The dynamic of the cluster makes it possible to strengthen the capacity for innovation of all members, actors of the Moroccan cosmetics and agri-food ecosystem.

The director of the cluster presented the CAIAC which is the first African center dedicated to agri-food and cosmetics, as part of new cooperation with GIZ and the Cadi Ayyad University. The Cluster Menara has been selected to benefit from the TAM III support program of the GIZ, implemented by ANIMA Investment Network. The CAIAC offered some services such as supporting the project ideas through technology assessment, carrying out pilot tests and prototyping, R&D Packaging, product and process, assistance in setting up turnkey projects, Support for the management of innovation projects, etc.

The visit has allowed to recognize the tools and the equipment's which allows the transformation of the raw products, in cream, powder, syrup, etc. A tasting session was an opportunity to recognize the new products made by the CAIAC team

4. Discussions

During the visit, we manage two additional sessions to collect feedback, the learned lessons and the recommendations

4.1. Case studies 1, 2, and 3

The participants were touched by the women role in Morocco. It's very important how much she has anticipated and she contributes to the local economy development. Also, the involvement and the creation of job through private initiatives such as Apia and the Berry-Nova farm. They Underlined the importance of the Moroccan cooperation between the private, public, academic and stakeholders in the agricultural sector that be projected to the others partners countries. The first three case studies showed the intelligence of the Moroccan people (scientists, researchers, cooperatives, farmers) in overcoming obstacles such as the actions adopted to make the country survive in good conditions during the Covid-19 pandemic.

The participants from Sudan propose the creation of a guideline, survey or apps to share the learned lessons between the partners. They were interested by the organization and structuring of cooperatives and farms as well as the commitment to innovation and diversification to ensure sustainability and also excellence. They are ready to share the findings of good practices in their countries through ffs and communication workshops. For our Sudan partners, the first case study is a good example to implement the Knowledge management practices since it reflects the successful story that promote all the actions related to the cooperation, the sharing, the knowledge valorization between academic, stakeholders and decision-makers. Regarding Apia and the Berry-Nova farm, they were impressive to see the evaluation of a cooperative that started with a small idea and a great love to its country and its products. The challenge of these two entities is to promote the employment of young and women, and to learn more than more without forget sharing with the researchers, farmers and small cooperatives and small farmers.

For Moldova participants, it was a good idea to develop knowledge between countries and also institutions through the learning route concept. Related to the three first case studies, they noted the mainly learned messages. Firstful, were the patience and the love felt by the managers and operators whether in Apia or in Berry-Nova which help the company/cooperative/farm to implement the best knowledge for a success story. The innovation, the clearly defined strategies, and also the sharing and the mentoring of academics and researchers are a focal ingredient to highlighted the output of the companies. The Moldova partners are ready and interested to share the three experiences in their country and propose some collaboration to improve in their local level some knowledge's such as the red fruit farm management.

4.2. Case studies 4, 5, and 6

Since the project seeks to facilitate knowledge for the individual, it will thus benefit the institute as an entity and the country as a whole. Therefore, the discussion tackled the participants' expectations and feedback on the learning route. The latter witnessed how several business creations and innovative new concepts concerning start-ups and incubators were developed in the Stargate of UM6P. They also expressed their happiness to have been able to meet realities they only saw in a bibliography.

It was announced that the next step after this learning route would be training on business creation, where they will go through the different topics related to business models. Accordingly, the participants were invited to identify the individuals who would best benefit from this upcoming training and will be able to duplicate it and share it with their colleagues and their institute.

The INRA representative expressed willingness to share their expertise with national partners. Moreover, the GENE BANK intends to broaden its scope of interest to include other microorganisms and resources. Hence, they are open to any partnership or collaboration with national and international organizations and institutes to serve such a goal. Additionally, they contribute to facilitating this collaboration at the national and international levels. To make it simpler to communicate the knowledge and outcomes to enterprises, they are working on a few initiatives in partnership with UM6P to establish a unit. They anticipate this unit participating in their meetings so they may work together and gain knowledge from them. Starting from scratch is difficult; thus, learning from others is necessary to prevent any errors or issues that could occur throughout implementation.

The Sudan representatives added that the synchronization between the different parties in Morocco and the shared interaction between the institutes, universities, governmental offices, and the community is a lesson they should adopt in their country. Furthermore, youth integration is a crucial aspect that every country must adequately consider. The youth, our heritage, need to value the respective country's resources. Moreover, women empowerment is an issue that has been shown very effectively in the different cases tackled. They also highlighted the importance of acquiring farmers' indigenous knowledge through scientific knowledge. In Addition, they emphasized that cooperatives' success ensues when the idea and interest come from its members. Finally, the cooperative issue

was brought up; as cooperatives in Sudan need to be revived, this subject needs to be discussed at their meeting and considered for a forum.

Representatives from Moldova observed a variety of good practices that they feel they may bring back and disseminate in their own country. They witnessed several breakthroughs and how they contributed to the incredible growth of Morocco. They exhibited an interest in the UM6P university, how they learn via practice, and how they engage the next generation in knowledge sharing. They expressed their desire to learn how to create a solid business plan and set up their businesses for young entrepreneurs in the next training. As a result, they recommended that the forthcoming training organizers understand the nuances of each nation in order to tailor and be more targeted to the requirements of the participants. They also mentioned Morocco's genetic resources management strategy for sustainable agriculture development and how Moldova should focus on this issue. They were also impressed by women's empowerment, the initiatives taken by women to alter mentality, voice their needs, hold businesses and be entrepreneurs, and have income that has an impact on not only the financial situation but also the development of the individual and, as a result, the status of women in society.

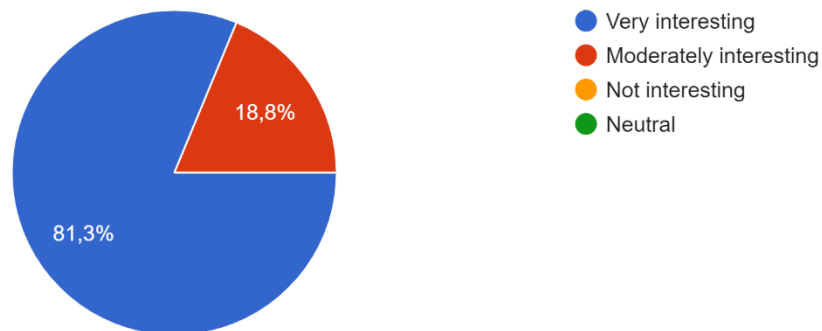
5. Evaluation results

The evaluation of the 6 case studies was done through a google form survey that includes the same questions: direct questions and reflection questions.

5.1. Case study 1

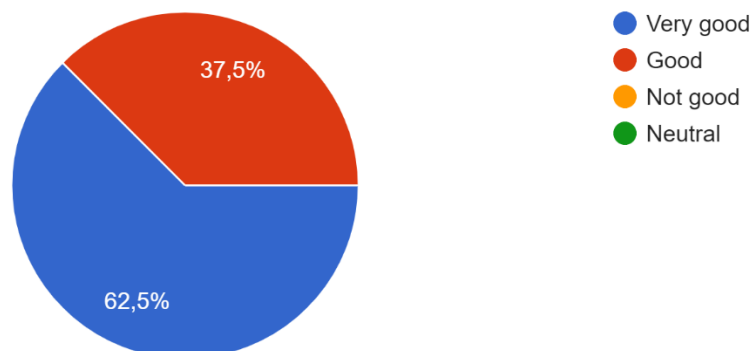
Did this case study met your expectations?

16 réponses



How can you rate organisation and logistics?

16 réponses



In case you dislike a point, what do you propose to improve it?

1. Discussion time of Learning Route
2. All is good
3. N/A

What are the best practices within this case study can be taken over and implemented in your country? 14 answers

1. Interaction and participation of different institute
2. Linking between Research Institutes and Agricultural Institutes
3. The collaboration and joint venture between the parties, the model and tools used in knowledge sharing, creating and storage
4. The work of all parties in a harmonious manner (universities, ministries, organizations)
5. Cooperating, value chain development, diversification of products and services.
6. BETTER connection between research and education
7. We have those aspects relatives to KM from IAV, ENA and INRA
8. Collaboration between the national system of training, research and extension that should be strengthened to attend rural development expectations
9. All of them
10. N/A
11. Institutional partnership
12. I was pleasantly impressed by the organization of the National Consolidation Bureau and its missions. I was also impressed by the modernization and implementation of new mechanisms that contribute to the development of agriculture. All these mechanisms and tools are particularly important and need to be implemented in our country to ensure effective knowledge management and exchange of experience between farmers and various experts.
13. Innovation standing as an effective lever for lasting development
14. Clear strategic vision to embark all stakeholders

Any additional comments, suggestions or recommendations? 13 answers

1. Comparison between different projects to use best practices
2. Training Farmers to Discover Market through Farmers Market Schools
3. It will be great if we create a standard framework for the organization to build such practices in agriculture also to be agile for localization
4. The time-management
5. Practical and operational aspects
6. Thanks a lot!
7. We need to work as à group within the consortium to have more impacts on Farmer 's needs
8. This collaboration covering knowledge sharing must be translated to formal organization such as mixt research unit or polytechnic pole
9. Very good experience
10. Ensure wide dissemination of scientific products for all stakeholders in the agricultural sector (managers, farmers, etc.)

11. Everything was fine

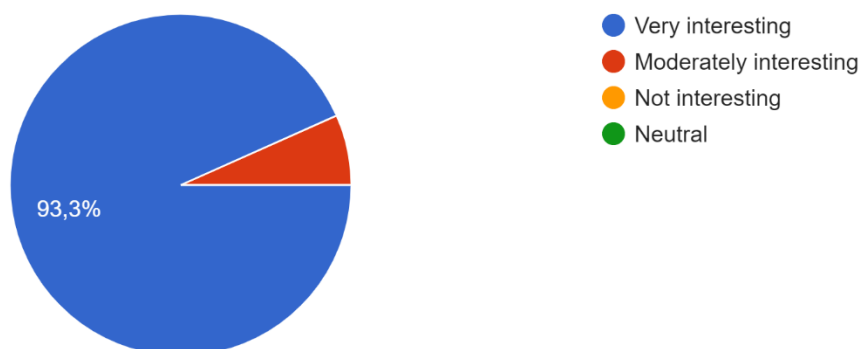
12. It was especially important to learn from our colleagues the strategic areas of research and agriculture in general. I believe that it would be necessary to organize a series of trainings on the territory of our country with the participation of experts from different countries, in order to train local experts.

13. Improved coordination among the institutional partners will profit the ecosystem

5.2. Case study 2

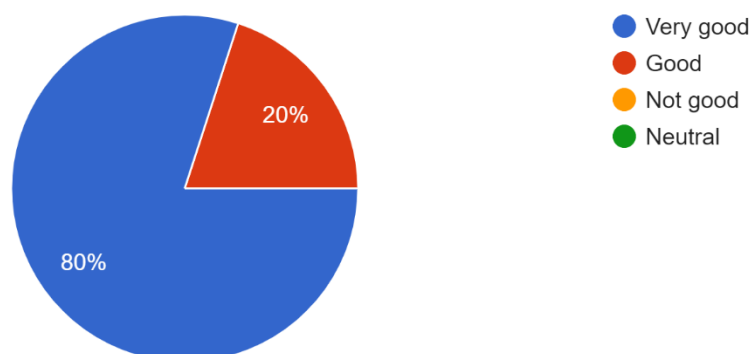
Did this case study met your expectations?

15 réponses



How can you rate organisation and logistics?

15 réponses



In case you dislike a point, what do you propose to improve it?

1. Transportation

What are the best practices within this case study can be taken over and implemented in your country? 15 answers

1. I believe that all practices could be included in our practice. The only difference is that Moldova is located in another geographical area, respectively the cultures differ. In our case, I think it would be good to focus on local fruits and medicinal plants, focusing not only on their cultivation but on obtaining the final product.
2. Use of local materials, employment of youth
3. Establishing big company of honey products and Cosmetics products
4. The coordination and collaboration between the concerned institutions in the public and private sectors
5. Scientific knowledge transferred from universities to reality by young scientists
6. Diversification and development of value chain are very important. Good and strategical management.
7. Collaboration between the farmer and the seller. Opportunities to find a growing market and to deliver the best quality according to scientific bases. Increasing knowledge by doing and experimenting new inputs to overcome inflation and decarbonation regulations
8. How to develop a good national company with a lot of products in order to promote of local products and launch ecotourism and catering activities
9. N/A
10. cooperation and development of new products
11. Farmers Cooperation
12. Enhancing the living standards of small farm holders through entrepreneurial mindset
13. A complex enterprise, with diversified products and services, good and modern management, with a developed value chain. These are interesting things and are worth analyzing and implementing by creating your own network for marketing to the end consumer.

Any additional comments, suggestions or recommendations? 13 answers

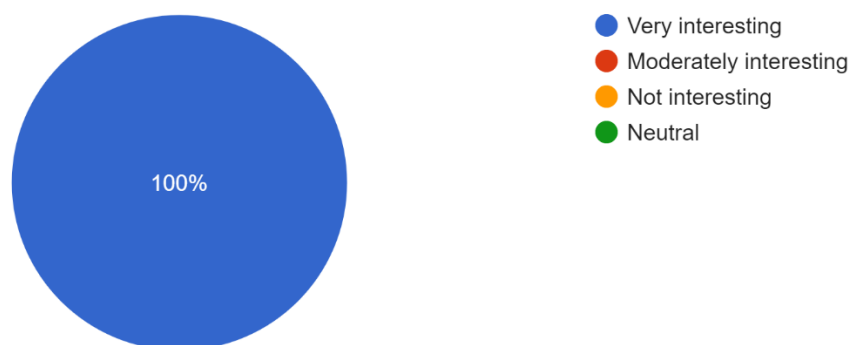
1. I was very impressed by the organization, the technology used and the overall strategy.
2. Case studies that call for youth financial and personal management should be reflected more and knowledge shared
3. Chain experience from Apia team.
4. The organization is marvelous reflecting good team work
5. The value chain was Actualized from production to marketing
6. Very interesting business
7. It was great pleasure to see women taking responsibility of a huge investment within rural area

8. I would like to thank you Hassania for hospitality, worm heart, openness and the chance to learn for their experience and share with us this beautiful career path
9. I suggest doing practical training sessions for young cooperatives in APIA
10. Thanks a lot!
11. Everything was fine
12. All was good
13. The use of plastic containers should be questioned

5.3. Case study 3

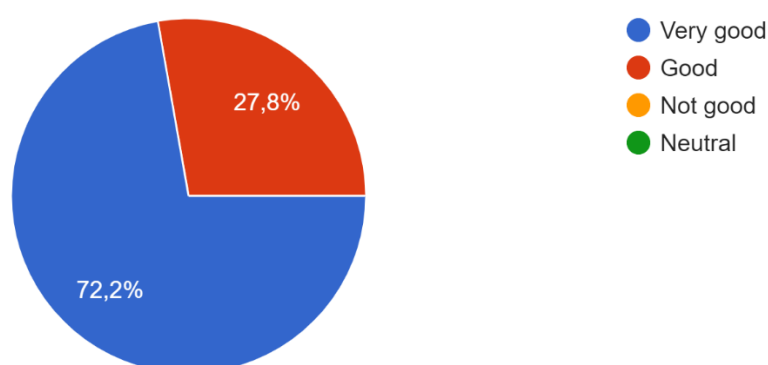
Did this case study met your expectations?

18 réponses



How can you rate organisation and logistics?

18 réponses



In case you dislike a point, what do you propose to improve it? 2 answers

1. In case when you buying production from Farmers and gave them only Money. You have to give them some Agricultural Guidance and motivate them
2. THE DURATION of the visit was short

What are the best practices within this case study can be taken over and implemented in your country? 13 answers

1. Diversity in more than one crop
2. The interaction between academics and farming will set a model for production of more comparable products that could be marketed worldwide and open more employment opportunities for youth
3. Knowledge, research, innovation, extension, are the power of sustainable business
4. Focus on innovation Optimization of operational processes Staff management Youth inclusion and capacity development Piloting and testing of new products and inputs
5. From a self-help group to a big cooperative company, the progression was not easy because of the endeavor and risks you must take. Applying good management strategy including quality management, marketing management and diversification could lead to higher income and more investments
6. All of them
7. N/A
8. do join activities in the field
9. Good relationship between academic researchers and farmers
10. It was a very interesting visit, combining the scientific aspect with the practical one. We have seen how knowledge is applied in practice and what the end result is. I was impressed by the description of the whole process of growing fruit in greenhouse conditions. It is a pretty good example for our country, which respects all three aspects: economic, ecological and social.
11. Belief - research and innovation are extremely important in business development, and consulting and connections ensure guaranteed success.
12. Innovation is the pivotal to this farm competitiveness
13. How to produce high-quality raspberries and strawberries and to export to European markets. How to work on sustainable and rational fertilization and pest management practices so that they can supply the plants with the requirements in order to be healthier and more productive

Any additional comments, suggestions or recommendations? 18 answers

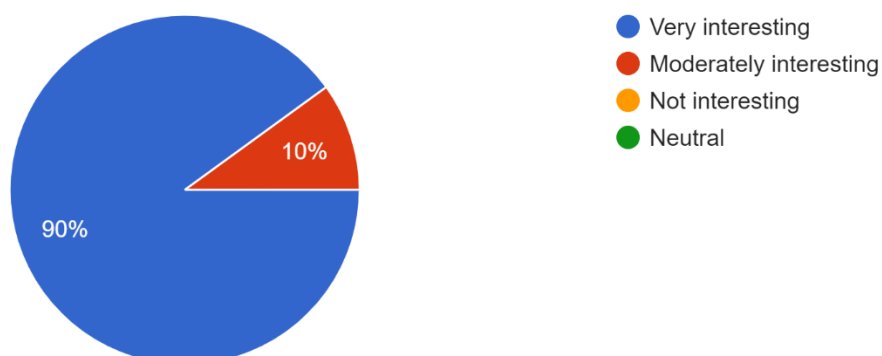
1. Wonderful
2. More of a kind experience to be shared
3. No comment
4. More practical aspects
5. I only wish great success to red fruit and the team, high yields and inspiration for new great ideas.

6. No think
7. it is a successful model for the application of the scientific knowledge in the agricultural exploitation
8. Thank a lot
9. Everything was fine
10. Good practices of this kind must be distributed not only in our country, but also in agriculture around the world.
11. All was good
12. The use of digital tools and especially data analytics will foster more the success
13. Thank you, Pr. Aziz, for sharing with us this experience and best practice. I wish success in everything you do, because you do it very well

5.4. Case study 4

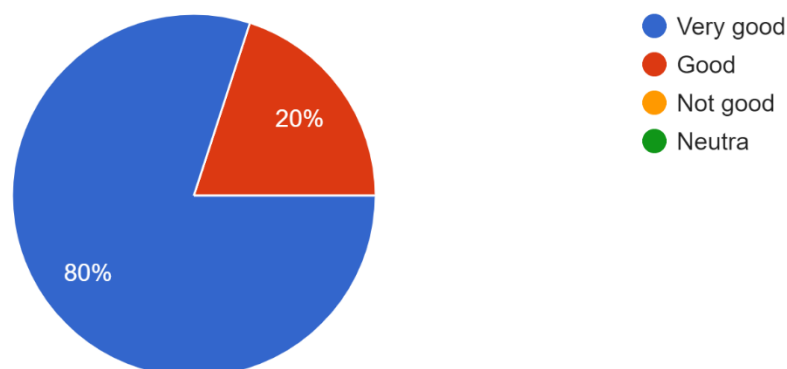
1. Did this study case met your expectations ?

10 réponses



2. How can you rate organization and logistics ?

10 réponses



In case you dislike a point, what do you propose to improve for next days? 3 answers

- | |
|--|
| 1. Because of time constraints we could have arranged a visit to the field to have a good overview of genetic resources applications on the field |
| 2. The issue of conserving genetic resources is a very important one, which cannot be ignored. The future of the next generations largely depends on this. |
| 3. Not enough time to go through further discussion |

What knowledge have you gained from this study case? 10 answers

- | |
|---|
| 1. All the process needed to prepare seed and document it beurre storage in the cold room |
| 2. The importance to joint international treaties related to PGR management Ex situ conservation approach Use of PGR in breeding programme |
| 3. Connecting research between the world and making information available is a wonderful thing. |
| 4. the importance of the conservation of plant genetic heritage in ensuring of the food sovereignty of our country |
| 5. The importance of the gene bank in the preservation of genetic resources to face food security challenges and threats related to climate change through the collection, conservation and development of genetic resources to protect biodiversity. |
| 6. Genetic resources conservation tools. |
| 7. Keep improving seeds and duration of expiry |
| 8. Conservation of genetic resources is a rather important issue and requires a serious approach. Due to climate change, frequent droughts and aridization, we risk losing this richness by using only natural conservation in the open field. At the same time, it is necessary to create crops resistant to these unfavorable |

conditions. During the presentations we got acquainted with the good practices of our colleagues from Morocco, having the opportunity to see the practical aspect.
9. Innovation and community engagement require gene bank to safeguard bio-diversity
10. That genetic resources are very valuable heritage that must be safeguarded and preserved

What are the best practices within this study case can be taken over and implemented in your country? 10 answers

1. It's a Moroccan case study which already in practice
2. Facing problems of climate change and food security issues by providing resilient varieties and efficient strategies based on genetic adaptation
3. Linking research centers and related institutions and making information available globally to know about my products
4. N/A
5. The stages of collection and the conditions of conservation of genetic resources
6. Strategy for sustainable agricultural development.
7. Genetic bank resource
8. Despite the physical and geographical position of the country, the problems are somewhat similar. In our country, with the conservation of genetic resources, there is also a need for soil conservation, which is a no less important issue and which we had the opportunity to discuss here.
9. gene bank is corner stone to provide resources to the ecosystem
10. I believe that we could take over in the Republic of Moldova the practice of conservation and management of Plant Genetic Resources based on FAO Global Plan of Action relevant to conservation, sustainable use, policies and building capacities

Any additional comments or suggestions? 10 answers

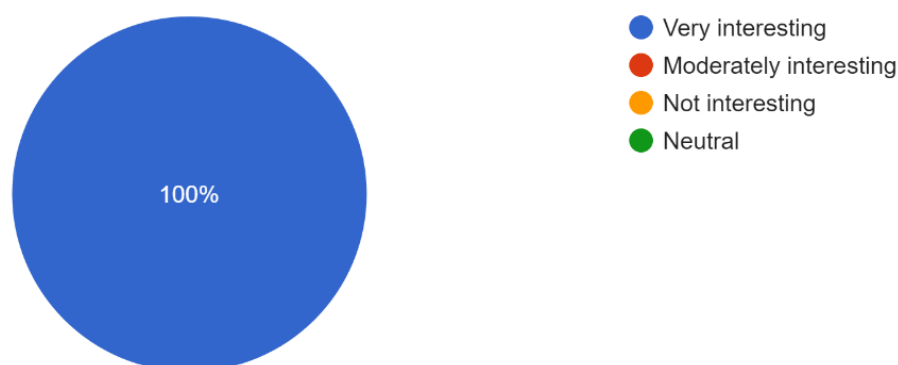
1. If there is any opportunity for another session, a visit could be arranged at the National genebank center
2. Inra is available to share its experience regarding PGR conservation
3. Joint cooperation through the exchange of the most important agricultural products links the ICARDA project with the three countries participating in the project
4. the extension of this conservation work to other arboreal species
5. No additional comments or suggestions
6. Everything was fine.
7. No comment

- | |
|--|
| 8. For the future, it is necessary to focus on this issue at international level, in order to find funds for the development of this sector. |
| 9. Politization is hot topic that needs to be dealt with urgently |
| 10. Thank you |

5.5. Case study 5

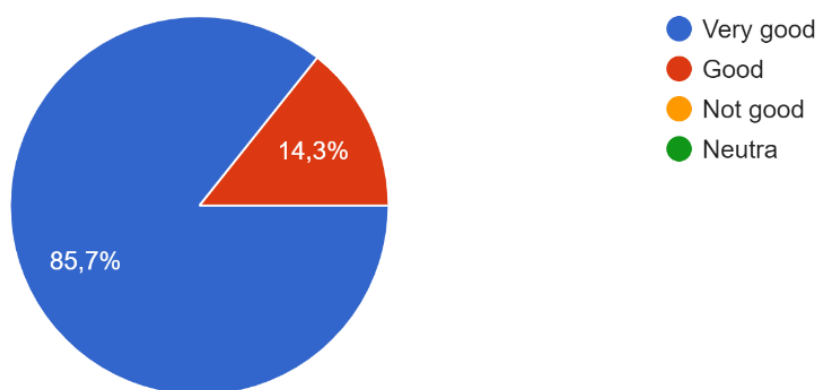
1. Did this study case met your expectations ?

14 réponses



2. How can you rate organization and logistics ?

14 réponses



In case you dislike a point, what do you propose to improve for next days? 11 answers

- | |
|--|
| 1. Ok |
| 2. All right |
| 3. Too many presentations time consuming |
| 4. I like all points |

5. No negative comments to share
6. n/a
7. Applying entrepreneurship in agriculture sector
8. Transportation
9. Extended time is needed
10. It was a pretty interesting visit.
11. N/A

What knowledge have you gained from this study case? 12 answers

1. Complexity of services and advisories for entrepreneurial, good knowledge and importance of innovations
2. Encouragement if entrepreneurship creation
3. The Innovation programs of UM6P to improve the university impact and to have an ecosystem of proximity
4. The um6p is a good example to replicate for other institutions
5. The masterwork in knowledge management is really amazing
6. We have discovered that Morocco has enormous potentialities in terms of the launch and development of startups
7. We are several to intervene in the field of youth entrepreneurship, the challenge would be to share the initiatives of each one, I have just learned of the existence of a work space (Maker space) dedicated for incubation of entrepreneurs at the Mohammed 6 Polytechnic University of Benguerir
8. The development of new businesses
9. Integration of Education with Research.
10. Women cooperative group in implementation Ideas
11. how to bridge the knowledge between the university and rural communities
12. the open innovation approach is critical to build a sustainable ecosystem that favors the community engagement

Any additional comments or suggestions? 14 answers

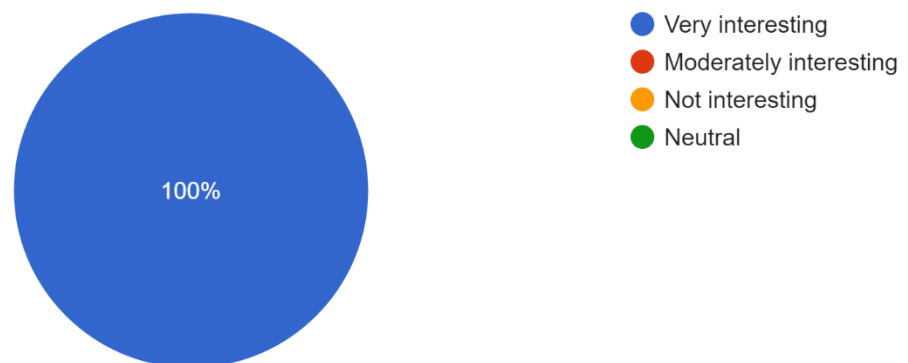
1. All was very good
2. incubation is flexible a thing that will encourage the interested person
3. This innovation ecosystem is very impactful and it should be linked in national level
4. I was impressed with the facilities and the dynamism of youngers good Communication in fluent English
5. I hope to cooperate and exchange products between them and my country's products.
6. There are many ideas that can be funded by state agencies

7. No additional comments or suggestions
8. Thanks a lot!
9. Everything was fine.
10. No comment
11. Allow more time for future visits
12. The ecosystem requires the improvement of the capital investment arm of the university to help the acceleration process of the startups
13. As in previous cases, there are some very good presentations that need to be promoted.
14. Thank you to share with us this experience and we have learn how the connection between the science, good infrastructure, entrepreneurs and investors can help speed up the knowledge sharing and development

5.6. Case study 6

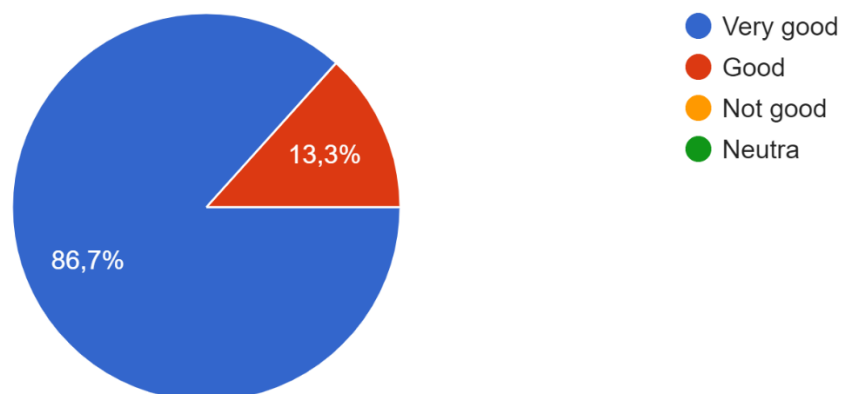
1. Did this study case met your expectations ?

15 réponses



2. How can you rate organization and logistics ?

15 réponses



In case you dislike a point, what do you propose to improve for next days?

1. Ok for me and thank you
2. N.A
3. I'd like
4. I like all points

What knowledge have you gained from this study case? 15 answers

1. Diversification of products and good services for business
2. The implementation process of the value chain
3. Good facilities in labs. The building is well equipped. Good example of research applied to industry.
4. Strong support to startups through laboratories and other facilities. Good linkage between project holders and investors.
5. High professionalism and accuracy in the manufacture and sterilization of foodstuffs.
6. the major interest of having a means of exchange between project leaders and practical scientific research.
7. I have just learned of the existence of the Menara cluster and the CAIC which offers services, in particular for the benefit of agricultural cooperatives which want to diversify their products by offering new compositions.
8. any ideas are applicable for business development
9. Private Partnership with Researchers for new products development.
10. Value chain in aromatic and medicinal plants

11. Women inclusion in economic life through establishing a cooperative only for females. Capacity development initiatives inside the cooperative, including basic education Sharing good practices through FFS
12. Direct interaction between cooperatives and experts benefiting from a technological platform which effectively improve the access to first hand knowledge
13. The shared technological infrastructure is effective tool to speed up the innovation transfer
14. I was very impressed with the high-performance equipment and the work team.
15. Cooperation between different partners (donors, institutions etc.) in order to create an cluster for mentorship, trainings, projects for improvement, innovation, research, optimization, carrying out pilot tests and prototyping

What are the best practices within this study case can be taken over and implemented in your country ? 15 answers

1. Necessary of trackability to insurance the good quality of agricultural products
2. The research trial process, validation and implementation
3. The aspect related to startups
4. Technology transfer and incubation are good practices to adopt by research institutions to make socio economic impact and to argue public investment
5. Good lab management
6. N/A
7. Possibilities of partnerships between the cooperatives wishing to diversify their products and the CAIC which offer their expertise and their materials for the valorization, in particular of agricultural products.
8. diversify business ideas
9. Product testing and research.
10. Making aromatic and cosmetics products
11. The need to elaborate a unique strategy for development, in order to develop different kinds of capacity development activities in a way to not overlapping each other but to create a synergy among different kind of extension services institutions and other stakeholders
12. mutual technology infrastructure that helps innovation transfer at cost effective way
13. the gap between small farm holders and scientific community is reduced in the case of functioning cluster.
14. He considers that in our country we have a lot of work to do in this regard. That is why we need both the practices here and the training of the staff.
15. How to consolidate and improve the competitiveness of the cosmetics industry and agri-food. How to promote innovation in the food and cosmetic industries and how to incubate innovative startups

Any additional comments or suggestions? 15 answers

1. All was good
2. A platform to be established to share knowledge with I other stakeholders
3. Interested to duplicate this experience in my institute which have the same mission
4. Done
5. Take the product from the country of origin, I mean sesame is from Sudan, not Egypt
6. Ensure wide dissemination and marketing of the work carried out by the cluster
7. No additional comments or suggestions
8. Thanks a lot!
9. Everything was fine.
10. More training to learning Route staff
11. Great appreciations for all initiatives of 3rd millennium cooperative and their openness. Wish them continuous success and new innovative ideas.
12. Teaching Managerial skills should also be part of the learning process
13. extend the services offered nationwide
14. Organizing trainings to develop knowledge and later to facilitate the opening of similar centers in other regions.
15. Thank you

6. Dissemination links

<https://www.inra.org.ma/fr/content/29062022-linra-au-sentier-dapprentissage-du-maroc>

<https://www.linkedin.com/feed/update/urn:li:activity:6947839099042996224>

<https://twitter.com/INRAMaroc/status/1542080378244046848?cxt=HHwWgICxheH7yOYqAAAA>

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<https://www.linkedin.com/feed/update/urn:li:activity:6946491611455356928/>

<https://www.linkedin.com/feed/update/urn:li:activity:6947668050535960576/>

<https://www.onca.gov.ma/en/node/249>

<https://ardna.org/fr/index/detail/58>

7. Presentations links

<https://drive.google.com/file/d/1sHcu42RaN9mmFbCUnRIXSfi1tYX0wkuo/view?usp=sharing>

8. Memories photos

More images are available in the following link:

<https://drive.google.com/drive/folders/1F5NCo8dmWTbKDiMCHCcUf5r4xFf6wcj-?usp=sharing>



Final report - Morocco Learning Route

