



**Kingdom of Morocco**

**SKIM**

Strengthening Knowledge Management  
for Greater Development Effectiveness  
in the Near East, North Africa,  
Central Asia and Europe

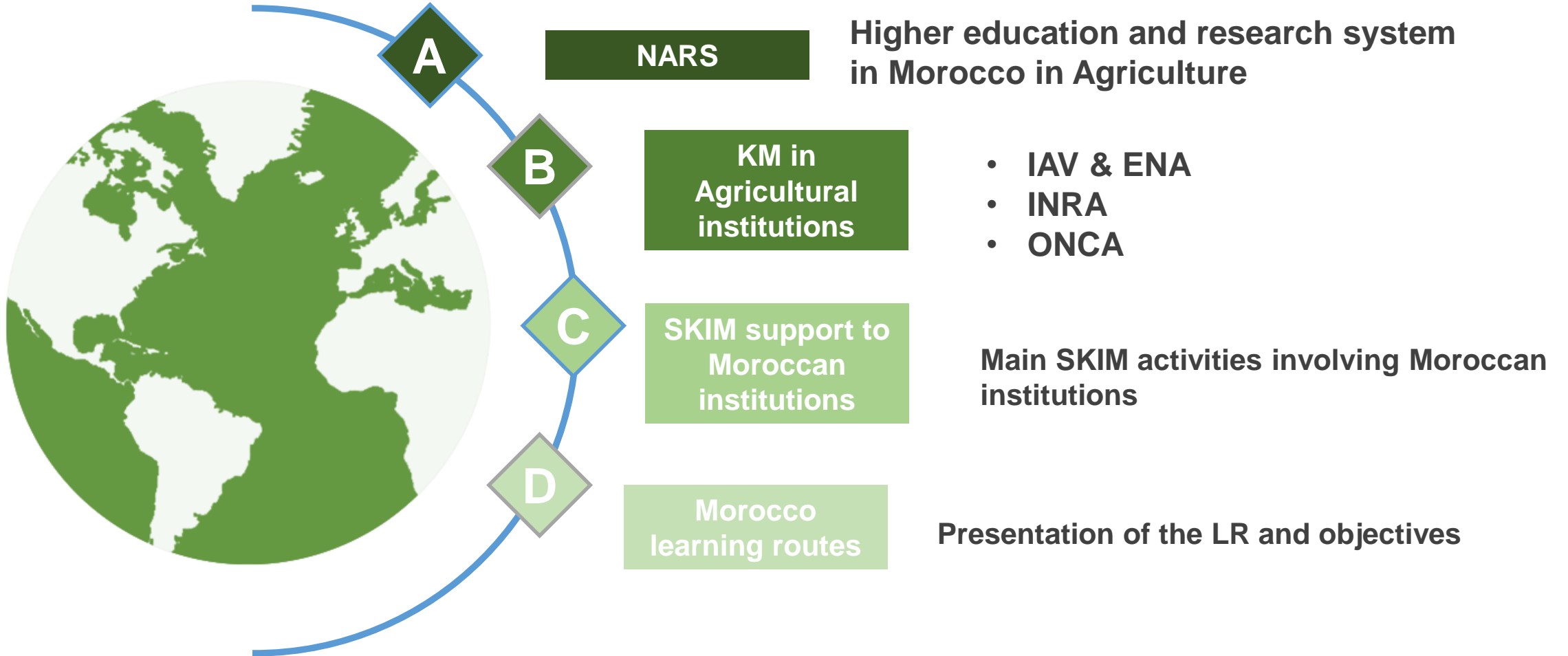


# Contribution of Moroccan higher education and research institutions to KM in agricultural sector

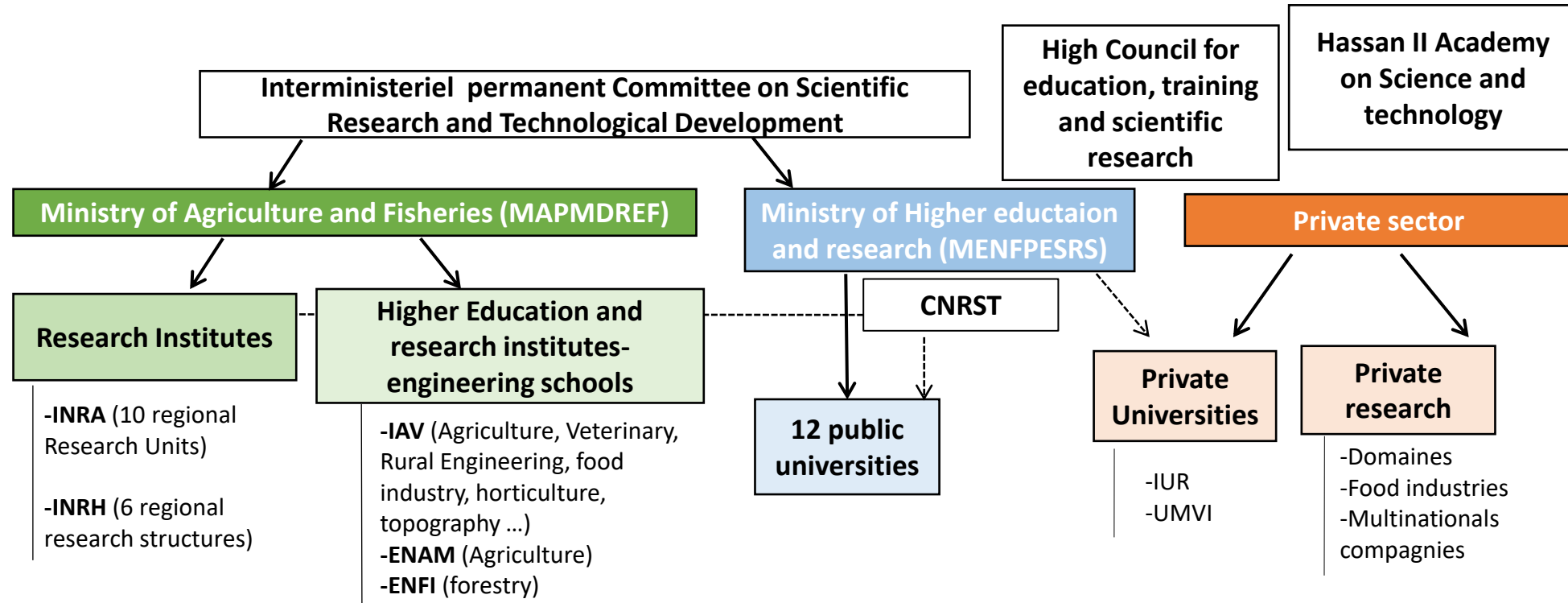
**SKIM PROJECT LEARNING ROUTES MOROCCO' EXPERIENCE**

**Mrs Sanaa Zebakh**

**[Sanaa.zebakh@yahoo.com](mailto:Sanaa.zebakh@yahoo.com)**

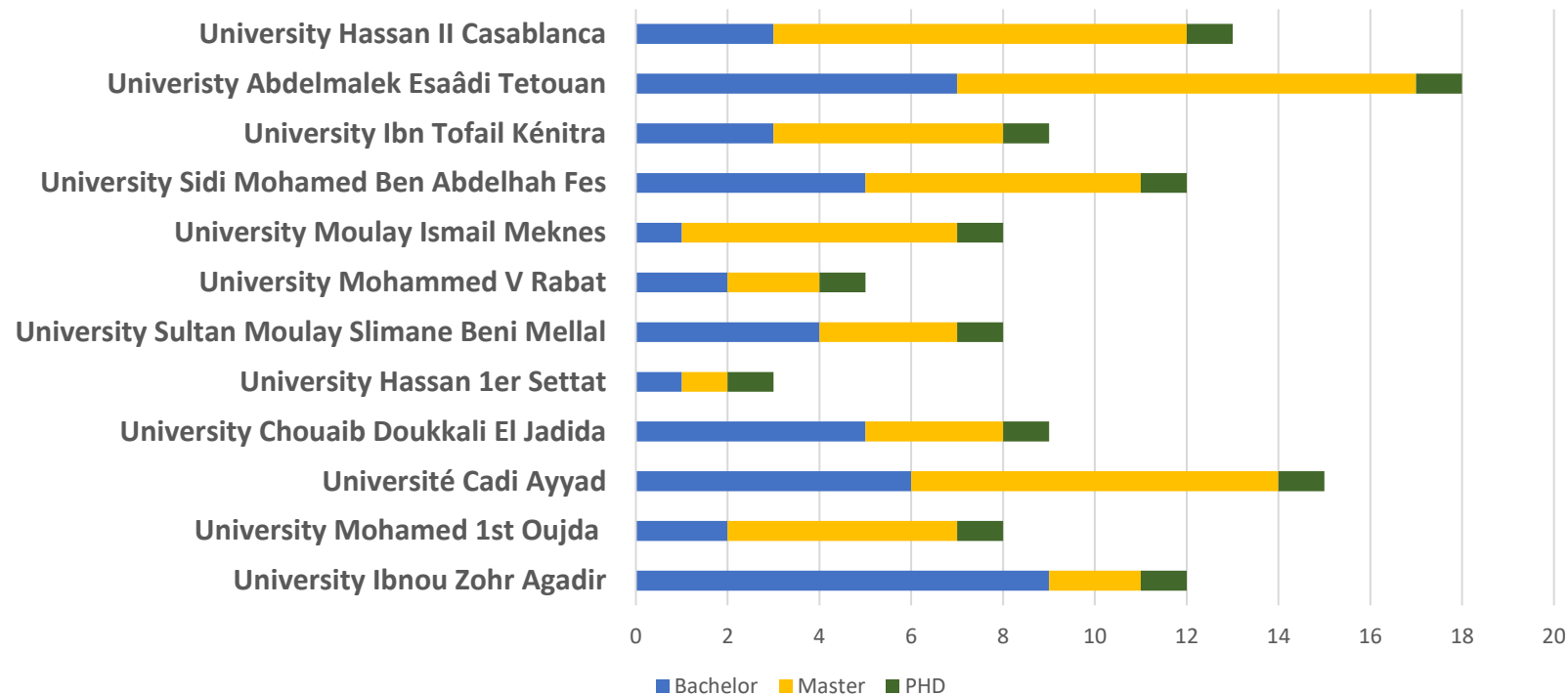


# Moroccan Agricultural HE & Research System (NARS)



# Universities : Training in agriculture and related fields

*Accredited programs in relation with agriculture, food industry, water ,  
environment, biodiversity ...*



## 2019-2020 Universities data :

- 391 591 new registred students
- 921 944 total enrolled étudiants
- 19 154 researchers

Sources : SZ analysis, 2020, extracted 2017-2020 accredited programs from Universities website ,  
data retrieved on 18.11.20 ,

# Agricultural HE &R institutions



Creation: 1942  
Students : 540  
Professors: 60  
1 campus (Meknes)

## IAV Hassan II

Creation: 1966  
Students : 2033 (311 PHD)  
Professors : 220  
2 campuses (Rabat & Agadir)



## ENFI Sale

Creation: 1968  
Students :  
Professors:  
1 campus (Sale)



Higher Education & research institutions



Creation: 1914 (1980)  
Researchers : 184  
Regional Centers : 10

## INRA

## INRH

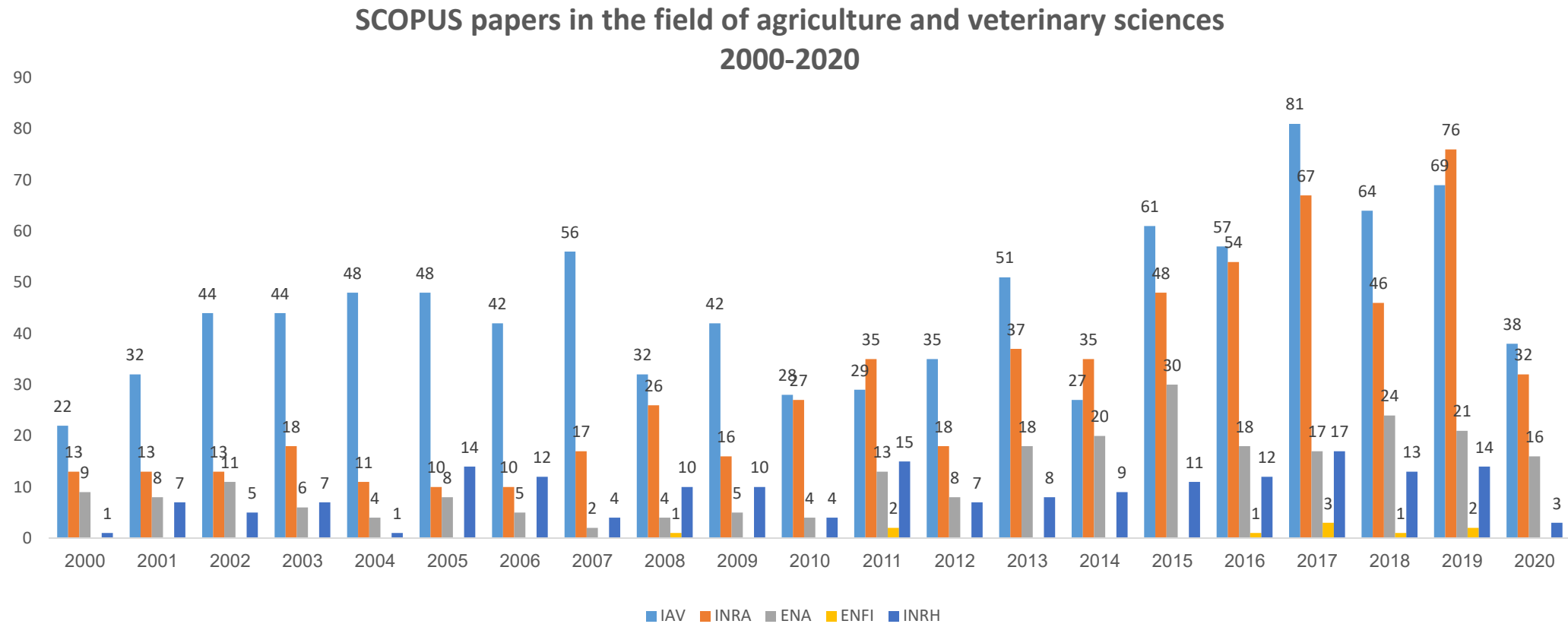
Creation: 1946  
Researchers :  
Regional Centers : 10



Research institutions

Vocational training :  
- 51 institutions  
- 2600 graduated/year  
- Diplôme : skilled worker, technicien , specialized technicien

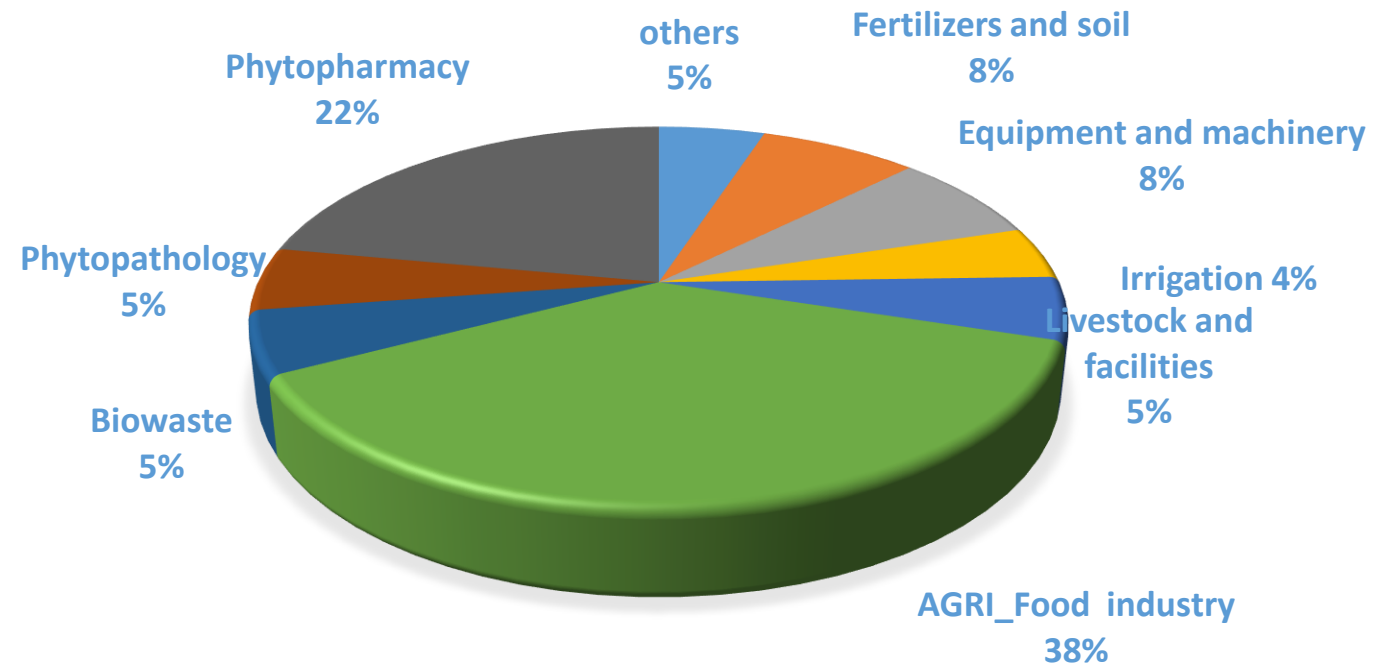
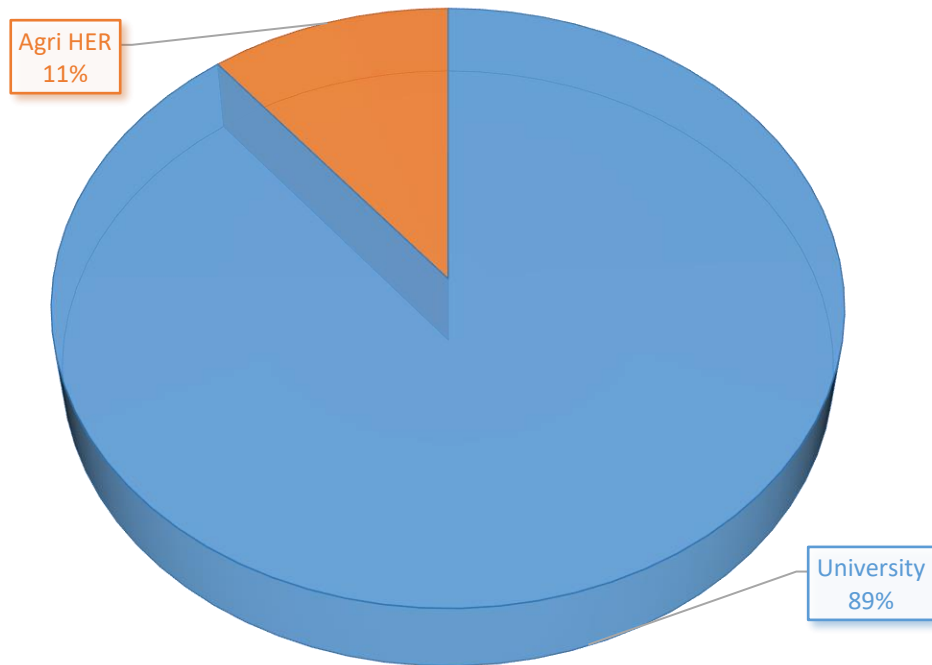
# Contribution of HE & R institutions to research scientific publication



**2019 : a total of 763 publications (180 agri institutions) (24%)**

# Contribution of HE & R institutions to innovation

PATENTS IN AGRICULTURE WITH MA ORIGIN



Source : ESPACENET ( 2000- 2019)



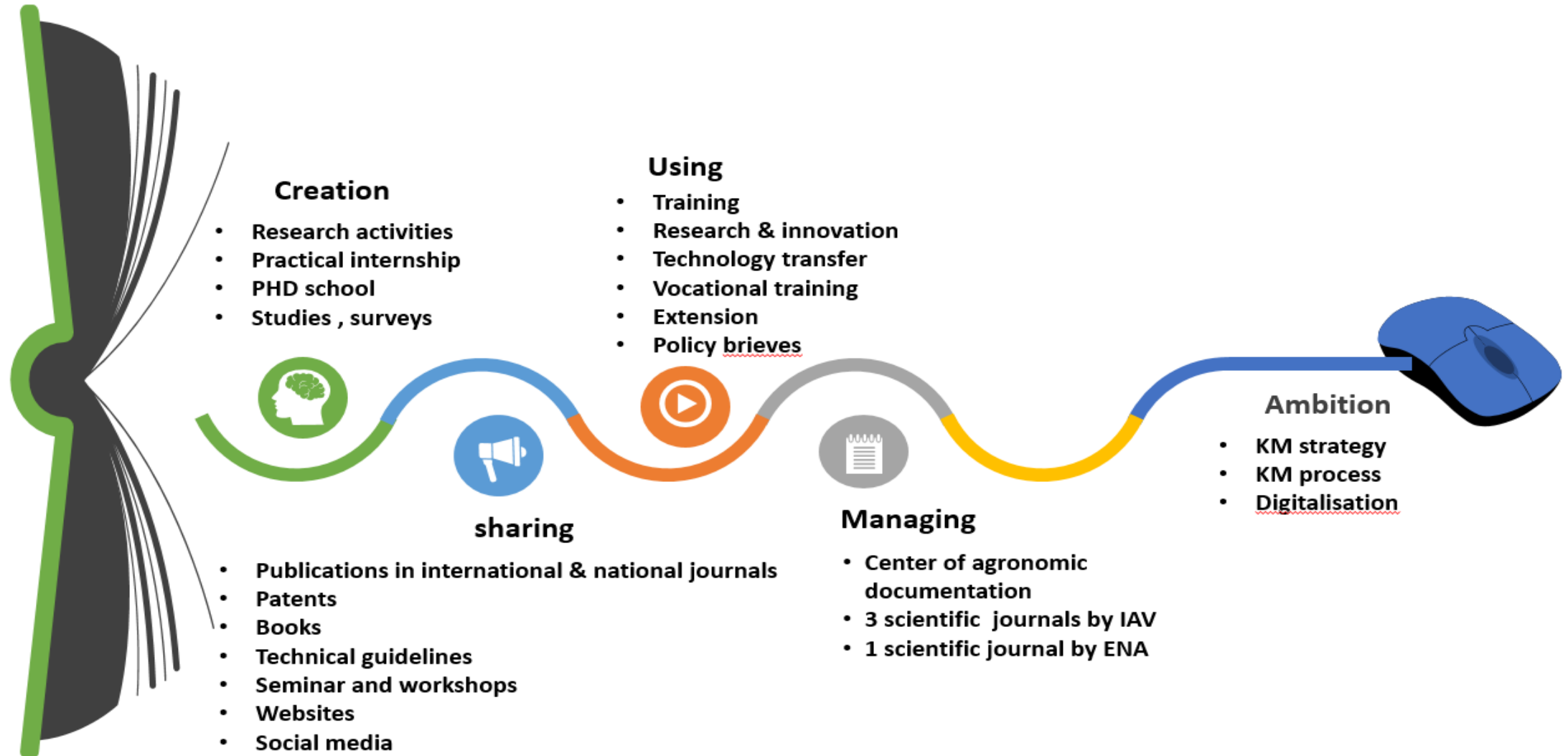




## **KM in Moroccan Higher institutions**

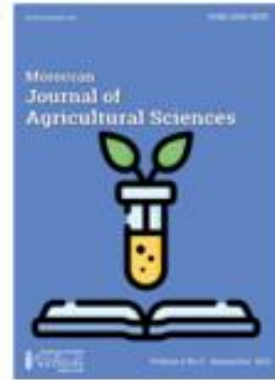
- IAV & ENA
- INRA
- ONCA

# KM at Higher education and research institutions: IAV Hassan II & ENA



# Scientific Journals

IAV HASSAN II JOURNALS



<https://www.techagro.org>



<https://www.agrimaroc.org>



<https://nelga.org/african-journal-of-land-policy-and-geospatial-sciences/>

IAV journal REMAV :  
44% of articles are submitted by authors of foreign origin, and REMAV references are cited 227 times by articles published in Scopus

ENAM JOURNAL



<https://alternatives-rurales.org/>

# Documentation centers and e-learning platforms

## he IAV Hassan II :

- ✓ A national agricultural documentation center.
- ✓ 9000 thesis (3 000 thesis on internal platform, around 20 000 Training reports and more than 70 Books edited by IAV.
- ✓ Online access to several international databases such as AGORA
- ✓ An Integrated Library Management System (ILMS) help keep track of IAV documents inventory and loans.
- ✓ a production center for e-learning and multimedia tutorials.

## ENAM :

- ✓ training and support center for rural development which aims at producing of audiovisual media on educational materials and new innovations.
- ✓ Library



# Facilities supporting innovation and technologies transfer



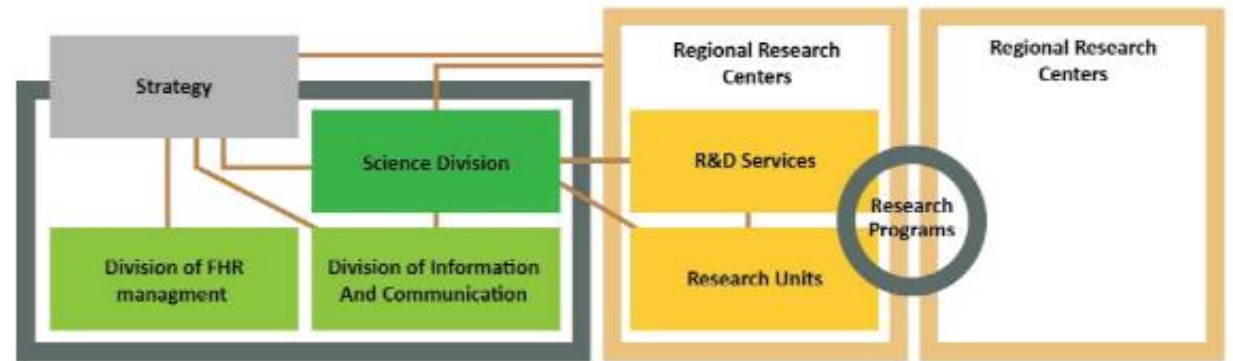
***ENAM** : Olive agropole , laboratory for diagnostic and control of crops pests and stored goods 'PHYTOCONSEIL), laboratory for soil, plant and water analysis (FERTICONSEIL), Pedagogical Farm, etc*

***-IAV Hassan II** : university veterinary hospital center, laboratories of soil, plant , food analysis, equine clinic, etc.*



# KM at Research institution: INRA

## Stream of Knowledge within INRA



### Regional Research Centers :

Knowledge elaboration

### Science division :

Knowledge evaluation, assertion and capitalisation

### Division of Information and communication :

Information Management  
Information Technology

24 research units located in 10 research regional centers

INRA has a portfolio of 232 varieties in the official register, of which 154 varieties are held by seed companies, i.e. 57.3%. Between 2009 and 2019, 31 new varieties were added to the Official Catalog, mostly cereals and legumes. New varieties are also protected for citrus and olive. With regard to crops with endemic and high added value, INRA has created six (6) varieties of argan tree and eight varieties of cactus for the regeneration of plantations ravaged by the cochineal



# Knowledge products



- Alawamia journal : 1961 - 2012.
- 2020 : African & Mediterranean Agricultural Journal-Al Awamia.

- Scientific books,
- reports,
- technical leaflets,
- scientific papers,
- communications,
- documentation about procedures , etc.



# Knowledge sharing

## Knowledge sharing

### Thematic websites

- **Soil fertility map in Morocco (GIS Website)**

An innovative fertilization consultancy

- **Climate Change Assessment (GIS Website)**

An integrated package of models which allows users to assess the impact change on agriculture.

- **CGMS (Crop Growth Monitoring System) (GIS Website):**

Weather monitoring, Crop growth modelling and Statistical methods.



*CGMS Statistical Toolbox*

# KM at Extension institution : ONCA



*Training*



*Digital advising*



*Information Center*



*School fields*



*Consulting Caravan*



*Study tour*

# ONCA extension channels and tools

- ONCA Website;
- Technical brochures, guides and Dalil elfallah- Flipbook;
- Broadcasting spots (TV and radio);
- ARDNA platform;
- Interactive platforms: "knowledge base" and "face agri";
- Info center online;
- Social media, youtube, ONCA TV;
- Extension caravan
- Online trainings on the platform to 650 agricultural advisers and managers.



## Story telling:

capitalize on the farmer experience and the context to capture **tacit knowledge** and transfer experiences and emotions through success stories and good agricultural practices. ONCA plans to produce 19 videos

# Challenges to KM in Moroccan agricultural institutions

Although higher education and research institutions are making efforts in the area of KM, they are facing several challenges:

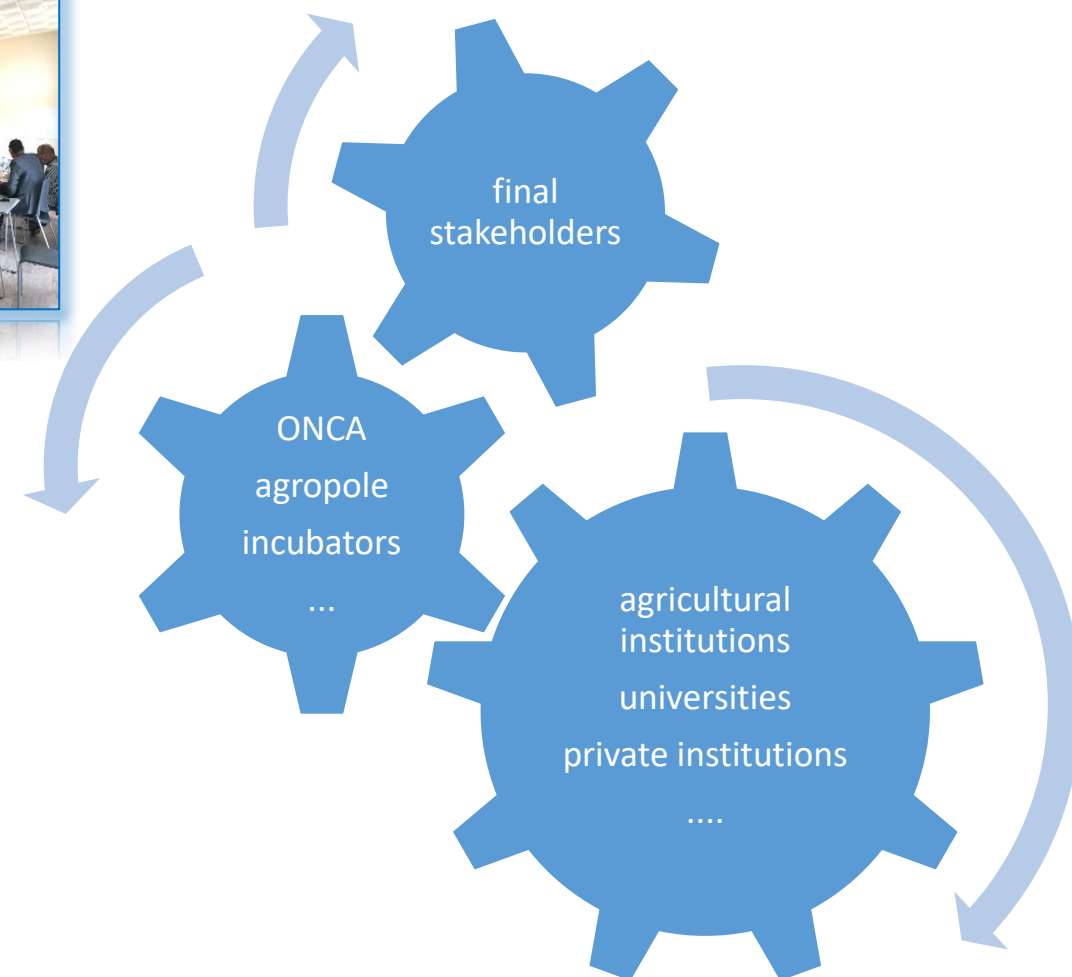
- Lack of vision and KM strategy at national level;
- Coordination between institutions is not formalized regarding KM (including with universities & private actors);
- Absence of initiative to capitalize on Tacit knowledge;
- Missing KM appropriate tool and process;
- Limited number of dedicated staff to manage knowledge
- Needs of training programs on KM and incentives
- Low attention is given to Copyright and Intellectual propriety;
- Unregular links with end-users;
- Low dedicated budget to implement KM.

# *The contribution of SKIM to Moroccan KM in agriculture*

- **Awareness and trainings on KM**
- **Best practice sharing (MEL tool/INRA)**
- **Strategy workshop on knowledge management in agricultural sector in Morocco (july 2021)**

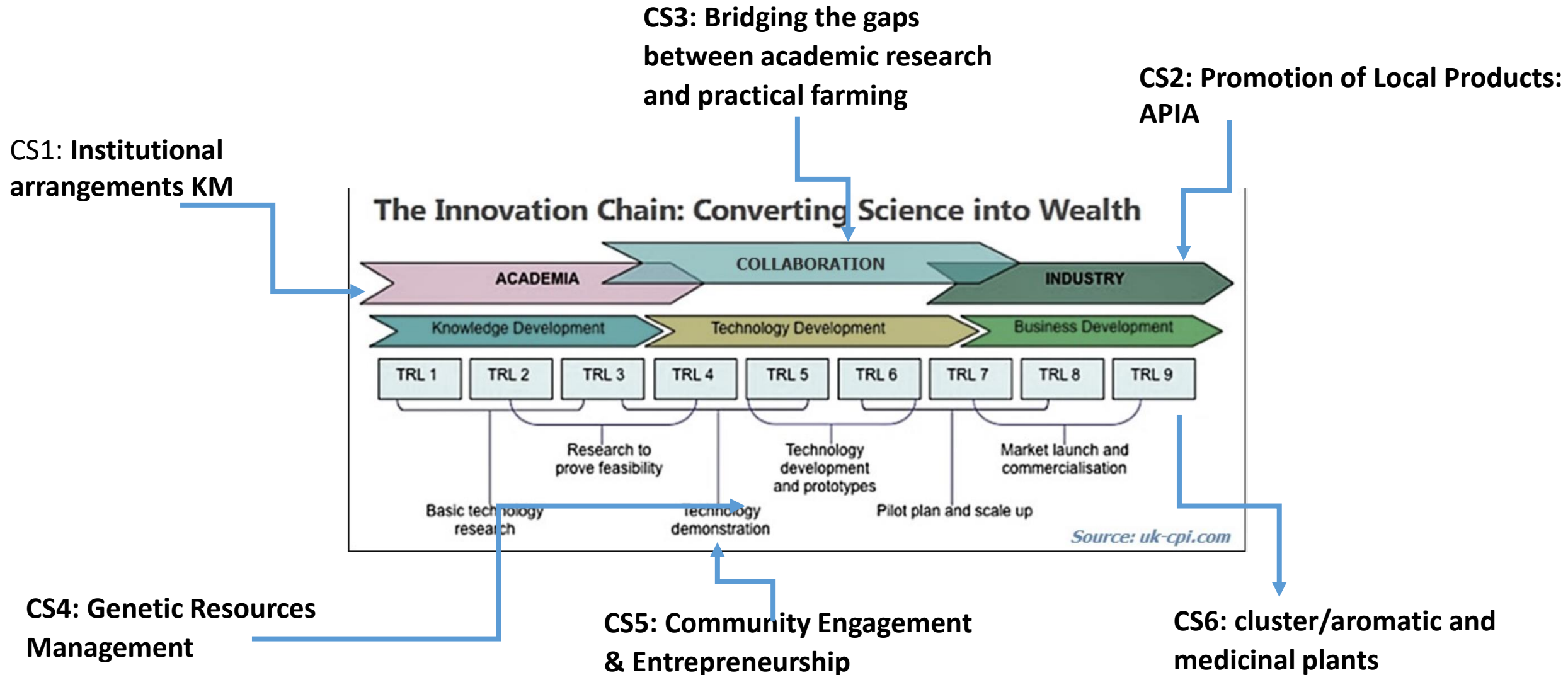
The Moroccan consortium of agricultural institutions namely IAV Hassan II, INRA, ENA and ONCA met to coordinate their vision and to plan future common actions aiming at improving their internal KM and KM impact at national level in the framework of the new green generation policy for agricultural development in Morocco.

- **KM agreement between IAV, INRA, ENA and ONCA**





# Morocco Learning routes : innovation chain



# What to learn through the CS ?

CS	Visit	Points to highlight?
1	<b>Institutional arrangements in knowledge management for Moroccan agricultural sector</b>	<ul style="list-style-type: none"> <li>- Difference of KM according to institution type ?</li> <li>- Digital tools for KM ?</li> <li>- How to collaborate to improve KM at national level?</li> </ul>
2	<b>Successful Operation of APIA, A National Company for the Promotion of Local Products: Notably Honey and Cosmetics products</b>	<ul style="list-style-type: none"> <li>- How to succeed a new business at local level ?</li> <li>- From local to international ?</li> <li>- What is the strategy of APIA in terms of product innovation?</li> <li>- what is the flow process of KM in a big company such Apia?</li> <li>- is there links with academic actors?</li> </ul>
3	<b>Bridging the gaps between academic research and practical farming</b>	<ul style="list-style-type: none"> <li>- What are the successful factors for the farm growth?</li> <li>- Who is ensured the KM and links with universities and research centers?</li> <li>- How do you insure your visibility?</li> <li>- What is the process of adopting new technologies or farming processes ?</li> </ul>
4	<b>Genetic Resources Management Strategy for Sustainable Agricultural Development in Morocco</b>	<ul style="list-style-type: none"> <li>- What is the Moroccan strategy for genetic conservation?</li> <li>- How is managed the bank gene center?</li> <li>- How is valorized the genetic collection stored in this bank?</li> <li>- What links with international gene banks internationally?</li> </ul>
5	<b>Community Engagement and Entrepreneurship in agriculture: Scaling up a sustainable ecosystem</b>	<ul style="list-style-type: none"> <li>- How is community engagement operated within the university?</li> <li>- What are the key factors of success for the innovation strategy implementation?</li> <li>- What are the means to ensure Sustainability in agriculture within the university plans?</li> <li>- Startup experience in incubation ?</li> </ul>
6	<b>Development of the value chain of the aromatic and medicinal plants in the Marrakech-Safi region</b>	<ul style="list-style-type: none"> <li>- What is a cluster and how does it work ?</li> <li>- Links with cooperative and academic sector ?</li> <li>- What is the main impact of the regional and national level ?</li> <li>- What are the challenges to overcome for a cluster ?</li> </ul>



# Morocco learning routes CS meeting the SDGs

Morocco  
learning routes

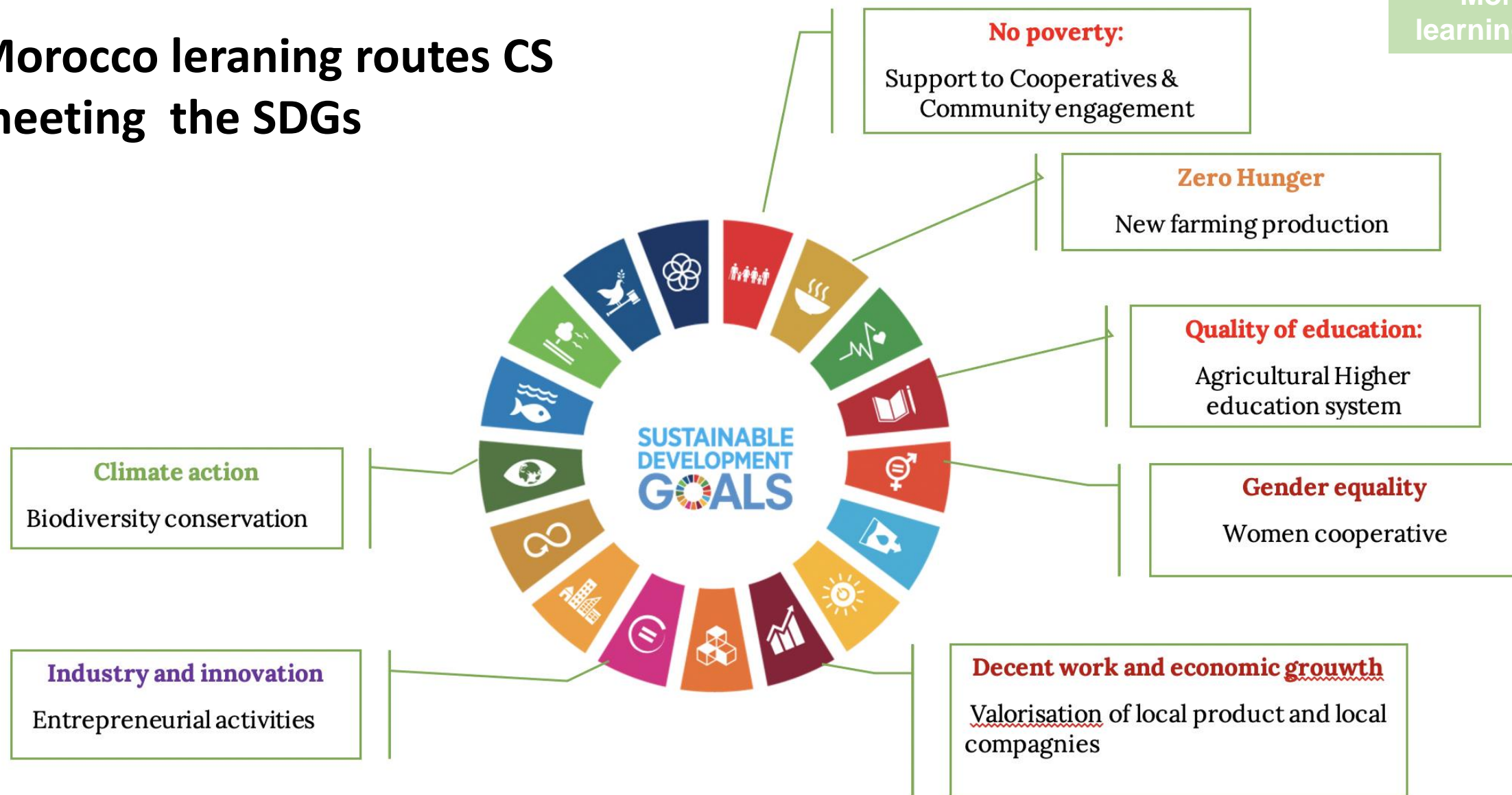


Figure 1 : Morocco learning routes meeting the UN SDGs

# Cross-table of Cases and Thematic Areas

Case study	Institutional KM procesus	Natural Resource Management	Agriculture and livestock productivity	Gender and youth
1	✎			
2			✎	✎
3			✎	
4	✎	✎		
5	✎	✎	✎	✎
6	✎		✎	✎

