



International evaluation and accreditation

EVALUATION AND ACCREDITATION DOCUMENTS

**PhD Agronomy (Crops and Cropping Systems in the
Drylands)**

Centre for Dryland Agriculture
Bayero University, Kano

Nigeria

December 2021

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International evaluation and accreditation

EVALUATION REPORT

PhD Agronomy (Crops and Cropping Systems in the Drylands)

Centre for Dryland Agriculture
Bayero University, Kano

Nigeria

September 2021

Bayero University, Kano has mandated the Hcéres to perform the evaluation of its PhD Agronomy (Crops and Cropping Systems in the Drylands). The evaluation is based on the "External Evaluation Standards" of foreign study programmes, adopted by the Hcéres Board on October 4th, 2016. These standards are available on the Hcéres website (hceres.fr).

On account of exceptional circumstances, the organization of the evaluation was adapted (replacement of the physical on-site visit by the panel by a visit by videoconference), while remaining compliant with the fundamental principles of institution or study program evaluation: external evaluation standard applied, the self-evaluation report (SER) and requested annexes sent by the institution, panel of experts set up by the Hcéres, collegial work by the panel, interviews with the institution and its partners by videoconference, report drafted and then sent to the institution in its provisional and then final version, response by the institution to the report by the panel. This specific procedure is in line with the official position defined jointly by the European Association for Quality Assurance in Higher Education (ENQA) and the European Quality Assurance Register for Higher Education (EQAR).

For the Hcéres¹ :

Thierry Coulhon, President

On behalf of the experts committee² :

Carole Molina Jouve, President of the committee

In accordance with the decree n°2014-1365, November 14th, 2014,

¹ The president of Hcéres "countersigns the assessment reports made by the experts' committees and signed by their president" (article 8, alinéa 5).

² The evaluation reports "are signed by the president of the committee" (article 11, alinea 2).

I. NATIONAL CONTEXT AND INSTITUTION IDENTITY SHEET

GENERAL CONTEXT AND HIGHER EDUCATION

Bayero University, Kano (BUK), established by the Federal Government of Nigeria in 1979 (Decree No. 79), is one of the Universities in Nigeria that provides high quality training in diverse areas. Located in Kano, capital city of Kano State in North West zone of Nigeria, BUK has 2 colleges, a business school, 18 faculties and 97 departments. BUK presently manages 85 undergraduate degree programmes, and 122 postgraduate programmes including 25 postgraduate diplomas, 59 masters and 38 doctorates. Additionally, there are 11 centres and institutes, plus several other supporting units. Actually, the student population is around 48,010 with 37,626 undergraduate and 10,384 postgraduate students, and the number of staff is around 1,784 teaching staff. The mission of BUK is to provide world-class academic and professional training, community services and research for the advancement of society.

One of academic centres of BUK is the centre for dryland agriculture (CDA). This centre was established in 2011 by the University Senate to respond to the development needs of the West and Central African (WCA) dryland region by contributing to improve agricultural productivity and sustainable management of the environmental resources through relevant high-level human capacity development, demand-driven research and effective outreach. The centre becomes in 2014 an African center of excellence (ACE) in dryland agriculture. The main objective of the establishment of the CDA is to specialize as a regional centre of excellence in dryland agriculture delivering quality training and applied research in response to the needs of the WCA region, thus contributing to food security, improved livelihood and reduction in poverty and conflicts. The centre offers postgraduate programmes awarding MSc and PhD in agronomy (with specialization in crops and cropping systems in the drylands), geography (natural resource economics and climate change), animal science (with specialization in livestock production and range management in drylands), agricultural economics (with specialization in livelihoods and natural resource economics), and Agricultural Technology in 5 academic departments: agronomy, geography, agricultural economics and extension, animal science, agricultural and environmental engineering. The CDA also manages a postgraduate diploma programme (PGD) in dryland agriculture and organizes several short courses for the specific training needs of stakeholders.

INSTITUTION

- **University/institution:** Bayero University, Kano (BUK).
 - **Component, faculty or department concerned:** Centre for dryland agriculture (CDA), department of agronomy, faculty of agriculture.
 - **Programme's title:** PhD agronomy.
 - **Training/specialty:** Crops and cropping systems in the drylands (CCS).
1. **Year of creation and context:** Established in 2013 as an on-site full-time programme of the centre for dryland agriculture (CDA) in BUK to respond to the needs of the West and Central Africa (WCA) dryland region through relevant high-level human capacity development and demand-driven research.
 2. **Site(s) where the programme is taught (Town and campus):** Kano, Bayero University main campus, centre for dryland agriculture (CDA).
 3. **Programme director:**
 - a) Surname, first name: Mohammed, Ibrahim Baba
 - b) Profession and grade: Lecturer/Professor, PhD
 - c) Main subject taught: System agronomy & physiology

METHODS AND RESULTS OF THE PREVIOUS ACCREDITATION(S)

4. Methodology and agency:

The accreditation of the PhD programme in agronomy (crops and cropping systems in the drylands) was conducted by the National Universities Commission (NUC) of Nigeria in March 2017.

5. Results:

This programme, which achieved 85.6% overall in the National Universities Commission accreditation exercise, is accredited for a period of 5 years.

HUMAN AND MATERIAL RESOURCES DEDICATED TO THE PROGRAMME

6. Human resources:

The staff is composed of 12 academic staff (including 7 professors, 3 senior lecturers and 2 others without rank), 5 senior technical staff, 2 senior administrative staff and 4 junior staff.

7. Material resources:

The PhD programme agronomy (crops and cropping systems in the drylands) benefits from CDA and BUK facilities. 10 offices are made available for academic staff, and students have access to:

- Classrooms of the University, shared among departments, and 4 CDA classrooms fully air-conditioned and equipped with projectors and electronic smartboards;
- Central library and internet facilities in the CDA office complex, and lecture rooms;
- 31 offices;
- Research units of the centre (GIS laboratory, molecular laboratory, central instrumentation laboratory and a tissue culture laboratory), with specific equipment for PhD student;
- State of the art laboratory equipment are available, including CHNS analyzer, NIRS, MPAAS, Ion Chromatograph, microwave digesters, incubating shakers, PCR (especially in the fields of land survey, hydrology and soil & water);
- Network of automated weather stations, a field camp support and cloud based air quality device;
- 22 hectares training and research farm, well equipped with drip and sprinkler irrigation facilities with full automation, net houses, screen houses, and a greenhouse, field research equipment including green seekers, GPS units, android phones.

Photographs of lecture rooms, laboratories and the farm, showing equipment and staff involved in trainings and research, were presented to the committee. These photographs allow to assess the quality of the accommodation, material resources, teaching and training conditions.

Also, CDA students have access to campus-wide license for numerous software and numerous e-resources, including databases such as ScienceDirect, Scopus, EBSCOHOST, LAN TEEAL and AGORA. Free internet connection is available for all faculty members and students. They use emails, newsletters, websites and other electronic media for communication and social media platforms. Experts were informed that professional training events, scholarship opportunities, conferences and research activities are available on the CDA website. Experts could not verify this information as the website did not work during the visit.

STUDENT POPULATION: EVOLUTION AND TYPOLOGY OVER THE LAST 4 YEARS

Year	Female (National)	Male (National)	Female (Foreign)	Male (Foreign)	TOTAL enrolled	Applicants	Graduates
2015/2016	0	1	0	0	1	4	1
2016/2017	1	1	1	0	3	2	3
2017/2018	1	2	1	2	6	7	1
2018/2019	2	3	0	2	7	6	0
2019/2020	0	2	0	0	2	14	0
TOTAL	4	9	2	4	19	33	5

Data on slides presented during the virtual visit and data sent to the experts after the visit need to be reviewed.

II. EVALUATION PROCEDURE

COMPOSITION OF THE COMMITTEE

President:

- Carole Molina Jouve, Professor, Institut National des Sciences Appliquées de Toulouse

Experts:

- Christophe Bressac, Assistant Professor, Université de Tours
- Delphine Latour, Assistant Professor, Université de Clermont-Auvergne
- Mathilde Colas, PhD student (Student expert), Université de Technologie de Troyes

Prof. Pierre Courtellemont, science advisor at the Hcéres, and Antoine Devoucoux du Buysson, head of project at the Hcéres, accompanied the committee.

ON-SITE VISIT DESCRIPTION

- Date of the visit: January 12th and 13th, 2021.
- Organisation of the visit: the virtual visit (due to COVID-19 sanitary crisis) took place over 2 days from January 12th and 13th. The first day started with a welcome speech by the Vice-chancellor and a discussion with the management team in charge of the self-assessment CDA's training programmes auditioned: PhD natural resource management and climate change, PhD agronomy (crops and cropping systems in dryland), MSc & PhD agricultural economics (livelihood and natural resource economics) and MSc & PhD animal science (livestock production and range management in African drylands). Others meetings followed with each team leaders of these training programmes (in the order listed above) and then academic staff from all training programmes. The second day started with closed meeting with students, followed with alumni and partners and finally a wrap-up meeting with head and leaders in charge of all programmes.
- Cooperation of study programme and institution to be accredited: Perfect cooperation by all stakeholders.
- People met:
 - Vice chancellor and management team
 - The Vice chancellor - Professor Sagir Adamu Abbas
 - Director, Academic planning - Professor Haruna Musa
 - Director, CDA - Professor Jibrin M. Jibrin
 - Deputy Director Training - Professor Sanusi Gaya Mohammed
 - Deputy Director Outreach and publications - Professor Amina Mustapha
 - Deputy Director Research - Dr Kabir Mustapha Umar
 - Project Manager - Dr Yusuf Garba
 - Coordinator Training - Dr Murtala Muhammad Badamasi
 - Coordinator Outreach - Dr Amina Lawan Mustapha
 - Student Liaison officer - Dr Aminu Alhassan Fagge
 - Team leaders in charge of training programme PhD degree agronomy (crops and cropping systems in the drylands)
 - Professor Ibrahim Baba Mohammed
 - Dr Shamsuddeen Rufai
 - Professor Muhammad Auwal Hussaini
 - Professor Mansur Bindawa Auwalu
 - Professor Abdu Ahmad Manga
 - Dr Abdulrahman Lado
 - Professor Shehu Usman Yahaya

Dr Abdulwahab Saliu Shaibu
Dr Adnan Aminu Adnan
Dr Halima Muhammad Isa

Other teachers and scientists from PhD agronomy (crops and cropping systems in dryland), PhD natural resource management and climate change, MSc & PhD agricultural economics (livelihood and natural resource economics) and MSc & PhD animal science (livestock production and range management in African drylands)

Kabir Mustapha Umar
Saleh B. Momale
Bashir Musa
Suleiman Rufai Babura
Lawal Abdul Sani
Dr Alpha Y. Kamara
Dr Hakeem Ayinde Ajeigbe
Dr Foloronso Akinseye
Professor J.M. Jibrin
Professor S.G. Mohammed

Students and alumni from 2 MSc & 4 PhD degrees
20 students, 8 alumni

Industrial Partners from 2 MSc & 4 PhD degrees
ICRISAT - Dr H.A. Ajeigbe
IITA - Dr A.Y. Kamara
Sassakawa Africa Association/SG2000 - Professor Sani Miko
NEWMAP - Musa Shuaibu

- Any problems: None
- Other: None

III. PRESENTATION OF THE STUDY PROGRAMME

1 – PRESENTATION OF THE STUDY PROGRAMME

The PhD programme agronomy (crops and cropping systems in the drylands) from Bayero University, Kano (BUK) aims to prepare students to become specialists in dryland ecology, in public and private research and development sectors, to meet food production challenges. It is run by the department of agronomy (faculty of agriculture) in collaboration with the department of geography (faculty of earth and environmental sciences) and coordinated by the centre for dryland agriculture (CDA) of Bayero University, Kano. The PhD courses deal with specific aspects of dryland farming activities such as crop-livestock integration, management and value addition to dryland products and production. Training involves professors, lecturers, technicians from the CDA and senior technical staff from private sectors. Students coming from West and Central Africa Regions can candidate to the formation. Within the department of agronomy, the objectives of the formation are very clear to train professionals with skills in modern methods and techniques of sustainable crop production.

The full-time PhD degree programme in agronomy (crops and cropping systems in the drylands) shall run for a minimum duration of 6 semesters and maximum of 10 semesters. The part-time PhD degree programme shall run for a minimum duration of 6 semesters and maximum of 14 semesters. The programme is designed with course works (including class lectures, presentations, review of some thesis/academic papers, case studies, field demonstration), internship in relevant industry and research works with a thesis defense at the end. Seminars and workshops are also organised with industrial and relevant stakeholders. In a very interesting way, the centre mentioned working on international mobility programme for doctoral students.

2 – PRESENTATION OF THE PROGRAMME'S SELF EVALUATION APPROACH

The CDA is evaluating its PhD degree programme in agronomy (crops and cropping systems in the drylands), with the aim of getting it internationally accredited. This evaluation is based on a dual process: self-evaluation and external evaluation (Hcéres). To conduct the self-evaluation, an internal committee was constituted by the Director of the CDA, Professor Jibrin Mohammed Jibrin and the external evaluation has been carried out by the Hcéres. The members of the internal committee are:

- Associate Professor Yusuf Garba, project manager - ACE project and chairman of the committee
- Dr Aminu Alhassan Fagge, student welfare officer - ACE management team
- Dr Amina Lawan Mustapha, outreach coordinator - ACE management team
- Dr Mustapha Mohammed Bello
- Associate Professor Murtala Muhammad Badamasi, coordinator training – ACE management team and secretary of the committee

In carrying out the assignment, the committee worked closely with Professor Ibrahim Baba Mohammed, Head of department of agronomy. The self-assessment methodology was based on the Hcéres training evaluation reference system.

IV. EVALUATION REPORT

AREA 1 – THE POSITIONING OF THE DOCTORATE

The programme clearly focuses on crops and cropping systems in the drylands to prepare students to become specialists in dryland ecology, and to meet food production challenges in Kano State, West and Central Africa sub-regions. This is in perfect agreement with the World Bank objectives. The objective of the doctorate is clear, the programme content and duration are well defined. The evaluation of training, courses and monitoring is a very interesting process for improvements; formal feedback to students and staff should be done to complete the process. An improvement could also be pursued with the incentive mention, in the department postgraduate student book, to publish research works in scientific journal. It will improve the international recognition of works, PhD programme and the centre.

The positioning of the doctorate and its interactions with its lead institution and partners (academic and private) are relevant, formally set out and effective. Fourteen African academic and private partners of the CDA, including three international universities and economic partners, are involved in curricula development, support teaching, research and industrial training. The partner contribution also includes co-supervision of students within research collaborations.

Area 1-1: The doctorate's distinct features and objectives are clearly defined

The admission requirements and the doctorate contents are well described in the postgraduate student handbook. Courses with the number of credits are fully detailed, including aims, learning and teaching activities, intended learning outcomes and methods of assessment. Credits for thesis should be harmonized in the different documents.

The curriculum includes an internship of one-month minimum duration. Also, seminars and workshops are organized by the CDA to give the opportunity to the students to present their research and interact with experts of their field. Existing partners from private sector, industry, other university and foreign institution share experiences and competences with students through lectures, courses, seminars and research supervision.

In a very constructive way, lectures and courses evaluation is available for all students in order to gather their opinions and improve teachings, usually at the end of each semester. A formal feedback could be useful for students and teachers to design improvements.

The doctorate is in keeping with the institution's scientific policy. Research policy, intellectual property policy, authorship policy, sexual harassment policy and code of ethics are all available to students in the BUK website.

This programme is provided on full-time basis with a minimum duration of 6 semesters and a maximum duration of 10. This study programme is able to accommodate students with special needs as candidates can be enrolled on part-time for a minimum duration of 6 semesters and maximum of 14 semesters.

The conditions for the award of degree are mentioned in the postgraduate student handbook. Students must register and earn a minimum of 48 credits (6 from PhD course work and 12 from thesis, plus 24 from MSc course work and 6 from dissertation) with a dissertation based on original research work and subjected to examinations following University regulations. An incentive to have one scientific publication for students to be graduated should be added in the handbook to improve the international recognition of the work, the student and the centre.

Area 1-2: The positioning of the doctorate is consistent with its environment

The doctorate is coordinated by the CDA and the department of agronomy. The CDA has links with many relevant international institutions, experts in crops and cropping systems in the drylands: 14 organizations from Nigeria, Ghana, Mali, India, Niger and Morocco are listed as research partners. 3 of them are foreign universities: University of Greenwich, UK, Kansas State University, USA and Dan Dicko Dankoulodo University of Maradi, Niger. The doctorate has a clear international orientation, which benefits doctoral students and staff. All these partners are involved in collaborative projects as co-supervisors in student research works. 5 senior technical staff from private companies participate directly in teaching. Since 2015, 8 different institutions confirm their interest in the formation by hosting students on internship. They also provide industrial training to the students and give them access to their facilities.

The CDA organizes biennial international conference on drylands with opportunities for students and staff to meet researchers from all over the world. The centre also invites guest lecturers from regional and international organizations to present and discuss research results with students. During these events, jobs opportunities can be eventually offered to students.

AREA 2 – ORGANISATION AND MANAGEMENT OF THE DOCTORATE

The organization is based on a scientific teaching, technical and administrative team that successfully manages and coordinates the doctorate. The roles and responsibilities of each team member are clearly defined in the departmental postgraduate student handbook. The admission level and requirements, application and registration processes, work progress monitoring and evaluation are well defined in the two handbooks. 19 PhD students were enrolled since 2015 from various backgrounds and different countries. Attention should be paid to the recruitment of foreign students and the gender balance. 11 grants/fellowships were awarded and the allocation method is well specified. The amount of the grants is often too low, not enough to live on. For Nigerian students, as no scholarships from World Bank could be awarded, efforts need to be pursued to give them financial support. 5 PhD theses have been defended since 2015: this result is very good meaning that the duration of the thesis is under control with an efficient supervision. An increase in the number of students is recommended. As the CDA website is the most useful tool of communication for students and staff, there is an urgent need to deeply improve it and updated it. Also, the results valorization in international scientific journals should be encouraged.

Area 2-1: Effective organization and management is in place for the doctorate

All information is mentioned in the two handbooks. Governance of the doctorate is well described. It is well adapted to its context and objectives. Teaching, technical and administrative staff, from the CDA and BUK are listed with their competences. The scientific programme is well structured with three components, courses, internship and research works. All information is mentioned in the handbooks.

Even if the documents given to the Hcéres committee gave us all the information about the CDA governance, its website needs to be improved and updated as it is often mentioned as a way to communicate with students, teachers and partners.

In addition, the creation of an international scientific advisory board (ISAB), a sectoral/industry advisory board (SIAB) and an academic board is of major interest to guide the ACE management team in the running of the centre. However, again, the composition and missions if these committees should be accessible more easily in website.

Area 2-2: There is an explicit policy for recruiting and funding doctoral students, which is adapted to the PhD program

The admission requirements are well described in the two handbooks.

19 students were enrolled since 2015, including 6 women and 13 men, or 13 Nigerians and 6 from other African countries (Mali, Burkina Faso, Sudan, Sierra Leone and Niger). Their initial training is mainly a Msc in agronomy, and since 2019, 3 students from MSc crops & cropping system were enrolled. With an increasing student number recruited per year from 2015 to 2018 (from 1 to 7 students), a sudden decrease was observed in 2019-2020, may be related to the Covid crisis. The selection ratio is good, except in 2019 (2 enrolled students for 14 applicants). Nevertheless, an increase in the number of students is expected as well as an increase in the number of students recruited beyond Nigeria, with specific attention to the gender balance.

Over the last five years, 11 students received grants/fellowships: ACE fellowship for students from foreign countries, CDA thesis grants and Bayero University PhD fellowships for Nigerian Students. 8 students were self sponsored, and financial support seems to be more difficult to get for Nigerian students. Alternative solutions should be found to support registration fees, food and accommodation for Nigerian students, as they need to carry out research works in good conditions.

The allocation mode of the grant/fellowship are clearly described in the scholarship policy document. The virtual visit allowed the experts to clearly identify that the grant/fellowship amount is low, not enough to live on, and requires finding additional financial support from family or a job.

Work progress monitoring tools are in place within the doctorate. The evaluation of the doctorate is based on a clearly identified procedure. Guidelines for supervisors and PhD students are very clear in terms of duties, responsibilities, roles and relationship. It is necessary to strengthen the incentive to publish results with a

publication in an international journal, and also to encourage national and international congresses participation.

Two supervisors manage each postgraduate candidate: one from the CDA and one from the company which welcome him.

5 theses have been defended since 2015; supervision seems to be efficient. Attention may be paid to the duration of the PhD works.

AREA 3 – SUPERVISION AND TRAINING FOR DOCTORAL STUDENTS

Reciprocal commitments of doctoral students and thesis supervisors are clearly defined in the postgraduate student handbook. The follow up policy is well constructed including seminars, meetings and regular reports.

Doctoral students have access to scientific teaching suited to their profile and career plans. Doctorates raise awareness of research ethics and scientific integrity. Students are invited to take part in scientific events (seminar, congress) and to choose courses during the first academic session.

According to the two student handbooks, the student rules, the thesis duration and the criteria for authorizing thesis defense are explicit and clearly provided to doctoral students and supervisors. Student supervision seems to be efficient and close as 5 theses have been defended since 2015.

As the full-time programme is designed with a minimum duration of 6 semesters that could be extended to a maximum duration of 10 semesters, indication may be added about the possibility to also extend scholarships/grants, essential to continue research works in good conditions.

Area 3-1: The doctorate applies a strict doctoral student supervision and follow-up policy

Criteria for authorizing thesis defense are explicit and communicated to doctoral students and supervisors. Organization rules for thesis defense are very well explained: the composition of the examination board mention, the participation of an external examiner. Follow up policy involves academic session through internal and external seminars, meetings with the supervisors and regular reports to assess research progress.

The University has a code of ethics where anti-fraud, relationship with staff and conduct on the campus are recorded.

Area 3-2: The doctorate offers diverse teaching and organizes supplementary events

Courses are linked to the expertise of universities, research units and private partners associated with the doctorate. The required score for core courses and thesis defense is clearly defined and known by users. Values of credit need to be reviewed to mention same values in the different handbooks and reports.

The doctorate invites students to take part in supplementary actions, such as scientific events. Five courses are proposed so that students have to register for a minimum of 6 and maximum of 9 credits. The number of elective courses could be increase linked to the professional insertion of student, for instance. For each course, the evaluation mode is well specified and communicated in the departmental postgraduate student handbook.

Area 3-3: The doctorate is based on explicit rules for thesis duration and defense

All the information on thesis defense is clearly expressed in the postgraduate student handbook: designed as full-time, PhD programme in crops and cropping systems in the dryland shall run for a minimum duration of 6 semesters and a maximum duration of 10 semesters.

PhD student shall present not less than two seminars, based on the research results, before being permitted to submit the thesis for evaluation. The composition and rules of the panel of examiners for oral and report evaluation are specified, including the mention of an external examiner participation. The guidelines for the thesis report and registration are explicit.

There is no indication about the possibility of an extension of the scholarship, which is essential to continue research works in good conditions.

The thesis duration seems to be under control and well managed as 5 students have defended a PhD since 2015.

AREA 4 – INTEGRATION OF DOCTORS ONTO THE JOB MARKET

The doctorate has links with local, national and international partners (public and private sector); interactions take place through congresses and workshop organization, internships, mutual courses and access to facilities. The first meeting of the sectoral/industry advisory board (SIAB) created by the centre was successful, as private partners are more closely associated to the governing structure of the CDA. The website of the centre may be improved and updated, as it was not accessible when the virtual visit was organized. Improvements could be done to develop formal communication tool. Few actions need to be strengthened concerning support for students in their professional integration: courses in management and entrepreneurship need to be more clearly identified and proposed to students with credits, alumni network should be created, and number of workshops with partners need to be increased. Data (student name, origin, background, year of graduation) are collected and should be analyzed to assess the quality of the doctorate, its economic impact, and the adequacy of training to expectations and objectives. The number of data is still low and data treatment should be effective.

Area 4-1: The doctorate includes mechanisms to promote the integration of doctors into the job market

The centre has numerous public and private partners at local, national and international level who promote the doctorate and could offer internships and jobs to doctors. In a very interesting way, the centre reinforces the links by associating the partners within a sectoral/industry advisory board (SIAB). It underlines the strategy of the centre to more closely associate private sector to the governing structure and then to increase the impact of the programmes.

The CDA also organizes biennial international conference on drylands, and invites guest lecturers from regional and international organizations to allow meetings between students and professional actors.

The CDA managers explain that the website, newsletters and social media platforms are useful to promote the doctorate. Unfortunately, as the website does not work, the experts could not evaluate the scope of these communication modes and no formal tools for information on job were identified.

Area 4-2: The doctorate has effective monitoring of the integration of doctors into the job market

It is difficult to have a real vision of the professional insertion and follow-up of graduates. Courses in management and entrepreneurship were mentioned during the visit in a very interesting way. However, they should be more clearly included in the programme with credits to further prepare professional projects after graduation. Also, an alumni network should be created to increase the impact of the programme, improve communications with graduated students and better disseminate job opportunities.

Area 4-3: The data collected is analyzed, communicated and used

As no information was available during the virtual visit on the insertion of the 5 graduated students into job market, it is difficult to assess that the data collected is analyzed and shared with candidates, doctoral students, doctors and stakeholders. It is also difficult to adapt the doctoral offer by taking an interest in the professional insertion of graduates in order to improve teaching, scientific events, choice of thesis topics, etc. according to the needs of the job market. Student name, gender, origin, background, subject of internship and hosted organism, year of graduation... all these data were provided to the experts, after the visit. It should be emphasized that data collection is very interesting in order to assess the quality of the doctorate and its economic impact, to follow graduated student and then to analyze employment data. One question remains about the number of applicants lower than the number of enrolled students. Data, collected on a regular basis, could also be reported to local, national and international partners (institutions and socio-economic partners) and then be key factors to increase attractiveness of the programme.

V. CONCLUSION

The PhD programme in agronomy (crops and cropping systems in the drylands) aims to train specialists in dryland ecology to meet food production challenges in Kano State, West and Central Africa sub-region; this is in perfect agreement with the World Bank objectives.

The contents and duration of the programme, its organisation with teaching, technical and administrative team are clearly defined in student handbooks, including admission level and requirements, application and registration processes, work progress monitoring and evaluation. The virtual visit was useful to assess the quality of the accommodation, material resources, teaching and training conditions. Links with local, national and international partners are well structured with the organization of congresses and workshops, hosting students in internships, mutual courses and shared facilities, and collaborative projects. The CDA strategy is clear and very interesting when private partners are associated to the governing structure through a sectoral/industry advisory board.

19 students were enrolled since 2015 including 6 women and 13 men, or 13 Nigerians and 6 from other African countries. 11 grants/fellowships were awarded. Recruitment in 2019-2020 was very low (2 students), certainly due to sanitary situation. The increase in the student number is then recommended with a special attention to the recruitment of foreign students and gender balance.

5 PhD thesis has been defended since 2015. It is a real success. The doctorate team may be encouraged and efforts need to be maintained. Few actions should to be strengthened in addition: the student professional integration with added courses in management and entrepreneurship, the creation of an alumni network, the impact of the programme with increasing visibility through deep improvements of the website and an incentive to publish research works in scientific journal or congresses. Special attention may be paid to doctorate duration and supervision. In addition, the grant amount should be increased to provide good conditions for students to carry out their research works. For Nigerian students, as no scholarships from World Bank could be awarded, efforts should to be pursued to give them financial support.

TODAY'S CHALLENGES

- Continue recruitment and enhance links with master programmes
- Defend thesis in time to facilitate graduation of the PhD students
- Promote graduate employment and graduate follow-up
- Improve communication and website
- Enhance results valorization with international reviewed publications and national/international congresses participation

OUTLOOK TO THE FUTURE

- Increase the number of students with student recruitment from various countries, with gender balance
- Increase visibility and attractiveness of the doctorate

STRENGTHS

- Relevant field in accordance with local concerns
- High level education for students in both courses, applied research and technology
- Appropriate teaching staff number and composition, and teaching facilities for this curriculum
- Numerous partnerships both academic and industrial with internship programme
- Learning environment (lecture halls, laboratories, internet connectivity, etc.) and very conducive students' accommodation

WEAKNESSES

- Still low student number
- Lack of promotion of employment for graduated students
- Lack of communication tools as functional website

RECOMMENDATIONS

- Increase the number of students with recruitment of foreign students from various countries in respect with the gender balance
- Increase the number of thesis defended
- Improve monitoring and supervision process to reduce the thesis duration
- Increase the number and amount of the grants for students and find more financial support for Nigerian students
- Improve the CDA website and promote the doctorate
- Create and monitor the alumni network

VI. COMMENTS OF THE INSTITUTION



CENTRE FOR DRYLAND AGRICULTURE
BAYERO UNIVERSITY, KANO



Vice-Chancellor: Professor Sagir Adamu Abbas, B.Sc., M.Ed. (BUK), PhD (BUK), FMAN
Director: Professor Jibrin M. Jibrin, B.Agric., M.Sc., Ph.D (ABU), RSS, FSSSN

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29th October 2021

Antoine DEVOUCOUX du BUYSSON
Responsable de projet / Head of project
Département Europe et International
Europe & International Department
2 rue Albert Einstein - 75013 Paris

Dear Professor du BUYSSON,

Re: CDA ACE Evaluation Report (PhD Agronomy - Crops and Cropping Systems in the Drylands)

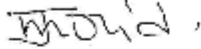
Thank you very much for sharing the evaluation report of our PhD programme in Agronomy (Crops and Cropping Systems in the Drylands). The Centre for Dryland Agriculture (CDA) responds to the comments and recommendations contained in the report as follows:

1. *Increase the number of students with recruitment of foreign students from various countries in respect with the gender balance.* The CDA accepts this recommendation. The Centre will embark on more rigorous advertisement of the programme locally and regionally. Deliberate effort will be made to strive for gender balance through provision of more incentives that will encourage more females to apply and enroll into the programme.
2. *Increase the number of thesis defended.* The CDA accepts this recommendation and will work to ensure that theses are completed and defended in time. The Centre is presently consulting with School of Postgraduate Studies (SPS) to institute a more rigorous process for tracking and monitoring student-supervisor progress.
3. *Improve monitoring and supervision process to reduce the thesis duration.* The CDA accepts this recommendation. As explained in item 2 above, already the Centre is consulting with School of Postgraduate Studies (SPS) to institute a more rigorous process for tracking and monitoring student-supervisor progress.
4. *Increase the number and amount of the grants for students and find more financial support for Nigerian students.* The CDA accepts this recommendation. The Centre will increase its drive to seek grants that will give more opportunities to support students. Already, the Centre has recently won six research grants from the Tertiary Education Trust Fund (TETFUND) and two grants from PASET that will provide opportunities to support students.
5. *Improve the CDA website and promote the doctorate.* The Centre has already started work on improving its website (<http://cda-buk.edu.ng/programmes/>). A communications team has now been constituted with a dedicated content manager for the site. More effort

will be done to promote the programme in the job market and to match graduates with opportunities.

6. *Create and monitor the alumni network.* Create and monitor the alumni network. The Centre accepts this recommendation and will work towards creating a robust and active alumni network.

Yours sincerely



Professor Jibrin M. Ebrin

LIST OF ACRONYMS

ACE :	African center of excellence
BUK :	Bayero University, Kano
CDA :	Centre for dryland agriculture
GIS :	Geographic information system
Hcéres :	High Council for the evaluation of research and higher education
ICRISAT :	International crops research institute for the semi-arid tropics
IITA :	International institute of tropical agriculture
ISAB :	International scientific advisory board
MSc :	Master of Science
NRM CC :	Natural resource management and climate change
NUC :	National Universities Commission of Nigeria
PGD :	Postgraduate diploma programme
PhD :	Doctoral degree
SIAB :	Sectoral/industry advisory board
UK :	United Kingdom
USA :	United States of America
WCA :	West and Central Africa

Europe and International department

ACCREDITATION DECISION

Ph.D. Agronomy (Crops and Cropping Systems in the Drylands)

Centre for Dryland Agriculture,
Bayero University, Kano

Nigeria

December 2021

SCOPE OF THE ACCREDITATION GRANTED BY HCÉRES

Hcéres has built its evaluation process based on a set of objectives that higher education institution PhD programmes must pursue to ensure recognised quality within France and Europe. These objectives are divided up into four fields among which are the accreditation criteria.

As for the "External Evaluation Standards", the accreditation criteria have been specifically designed for foreign PhD programmes. The accreditation criteria were adopted by the Board on December 2017 and are available on the Hcéres website (hceres.fr).

The accreditation committee, meeting his accreditation decision, has wholly taken into account the final evaluation report of the PhD programme. This accreditation decision is the result of a collegial and reasoned process.

The accreditation decision issued by Hcéres shall not grant any rights whatsoever, whether in France or abroad. The decision on PhD programme accreditation confers an accreditation label and does not infer recognition of the accredited qualifications. The Hcéres accreditation process therefore has no impact on the qualifications recognition process in France.

FULFILLMENT OF THE ACCREDITATION CRITERIA

AREA 1: THE POSITIONING OF THE DOCTORATE

Accreditation criterion

The positioning, the content and the objectives of the doctorate are clearly defined. Its interactions with the stakeholders (lead institution(s), foreign partners, socio-economic environment) are formally set out and effective. Its links with the research units and the institution's scientific policy are effective.

Criterion assessment

The programme clearly focuses on crops and cropping systems in the drylands to prepare students to become specialists in dryland ecology, and to meet food production challenges in Kano State, West and Central Africa sub-regions. This is in perfect agreement with the World Bank objectives. The objective of the doctorate is clear, the programme content and duration are well defined. The evaluation of training, courses and monitoring is a very interesting process for improvements; formal feedback to students and staff should be done to complete the process. An improvement could also be pursued with the incentive mention, in the department postgraduate student book, to publish research works in scientific journal. It will improve the international recognition of works, PhD programme and the centre.

The positioning of the doctorate and its interactions with its lead institution and partners (academic and private) are relevant, formally set out and effective. Fourteen African academic and private partners of the CDA, including three international universities and economic partners, are involved in curricula development, support teaching, research and industrial training. The partner contribution also includes co-supervision of students within research collaborations.

AREA 2: ORGANIZATION AND MANAGEMENT OF THE DOCTORATE

Accreditation criterion

The doctorate's organization and management are clearly defined and rely on material and human resources adapted to the requirements of programmes at ISCED level 8. Internal quality assurance mechanisms are in place and effectively used in order to improve continuously the doctorate. The doctoral students recruiting is formally set out, their funding is fair and sustainable.

Criterion assessment

The organization is based on a scientific teaching, technical and administrative team that successfully manages and coordinates the doctorate. The roles and responsibilities of each team member are clearly defined in the departmental postgraduate student handbook. The admission level and requirements, application and registration processes, work progress monitoring and evaluation are well defined in the two handbooks. 19 PhD students were enrolled since 2015 from various backgrounds and different countries. Attention should be paid to the recruitment of foreign students and the gender balance. 11 grants/fellowships were awarded and the allocation method is well specified. The amount of the grants is often too low, not enough to live on. For Nigerian students, as no scholarships from World Bank could be awarded, efforts need to be pursued to give them financial support. 5 PhD thesis have been defended since 2015: this result is very good meaning that the duration of the thesis is under control with an efficient supervision. An increase in the number of students is recommended. As the CDA website is the most useful tool of communication for students and staff, there is an urgent need to deeply improve it and updated it. Also, the results valorization in international scientific journals should be encouraged.

AREA 3: SUPERVISION AND TRAINING FOR DOCTORAL STUDENTS

Accreditation criterion

A strict policy of supervising and follow-up of doctoral students is set. Doctoral students have access to various teaching and professional trainings and take part in scientific/professional actions. Explicit rules are defined concerning the thesis duration and defense. Measures to combat fraud, plagiarism and corruption are applied within the doctorate.

Criterion assessment

Reciprocal commitments of doctoral students and thesis supervisors are clearly defined in the postgraduate student handbook. The follow up policy is well constructed including seminars, meetings and regular reports. Doctoral students have access to scientific teaching suited to their profile and career plans. Doctorates raise awareness of research ethics and scientific integrity. Students are invited to take part in scientific events (seminar, congress) and to choose courses during the first academic session. According to the two student handbooks, the student rules, the thesis duration and the criteria for authorizing thesis defense are explicit and clearly provided to doctoral students and supervisors. Student supervision seems to be efficient and close as 5 theses have been defended since 2015. As the full-time programme is designed with a minimum duration of 6 semesters that could be extended to a maximum duration of 10 semesters, indication may be added about the possibility to also extend scholarships/grants, essential to continue research works in good conditions.

AREA 4: INTEGRATION OF DOCTORS INTO THE JOB MARKET

Accreditation criterion

The doctorate implements systems to promote the doctorate and the integration of doctors into the job market. The integration monitoring and analysis are effective and used to perform the continuous improvement of the doctorate.

Criterion assessment

The doctorate has links with local, national and international partners (public and private sector); interactions take place through congresses and workshop organization, internships, mutual courses and access to facilities. The first meeting of the sectoral/industry advisory board (SIAB) created by the centre was successful, as private partners are more closely associated to the governing structure of the CDA. The website of the centre may be improved and updated, as it was not accessible when the virtual visit was organized. Improvements could be done to develop formal communication tool. Few actions need to be strengthened concerning support for students in their professional integration: courses in management and entrepreneurship need to be more clearly identified and proposed to students with credits, alumni network should be created, and number of workshops with partners need to be increased. Data (student name, origin, background, year of graduation) are collected and should be analyzed to assess the quality of the doctorate, its economic impact, and the adequacy of training to expectations and objectives. The number of data is still low and data treatment should be effective.

FINAL ASSESSMENT

Considering the accreditation criteria analysis detailed above, the accreditation committee issues the following decision:

“Five-year unreserved accreditation decision”

and draws attention to the various recommendations made by the committee of experts in its evaluation report:

- Increase the number of students with recruitment of foreign students from various countries in respect with the gender balance
- Increase the number of thesis defended
- Improve monitoring and supervision process to reduce the thesis duration
- Increase the number and amount of the grants for students and find more financial support for Nigerian students
- Improve the CDA website and promote the doctorate
- Create and monitor the alumni network

SIGNATURE

For HCERES,

Thierry Coulhon, President:



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