



International evaluation and accreditation

EVALUATION AND ACCREDITATION DOCUMENTS

PhD Natural Resources Management and Climate Change

Centre for Dryland Agriculture
Bayero University, Kano

Nigeria

December 2021

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CONTENTS

Evaluation report	pages 2 to 14
Comments of the institution	pages 15 to 17
Accreditation decision	pages 18 to 22



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EVALUATION REPORT

PhD Natural Resources Management and Climate Change

Centre for Dryland Agriculture
Bayero University, Kano

Nigeria

September 2021

Bayero University, Kano has mandated Hcéres to perform its Natural Resource Management and Climate Change doctoral program evaluation. The evaluation is based on the “External Evaluation Standards for doctorates out of France”, adopted by the Hcéres Board on March 26, 2018. 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 » (article8, alinéa 5).

²The evaluation reports « are signed by the president of the committee » (article11, 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), 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

- a. **University/institution:** Bayero University, Kano (BUK).
- b. **Component, faculty or department concerned:** Centre for dryland agriculture (CDA), department of geography, faculty of earth and environmental sciences.
- c. **Programme's title:** PhD natural resource management and climate change (NRM & CC).
- d. **Training/speciality:** None.
- e. **Year of creation and context:** Established in 2013 as an on-site full time programme of the 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.
- f. **Site(s) where the programme is taught (Town and campus):** Kano, Bayero University main campus, centre for dryland agriculture (CDA).
- g. **Programme director:**
 - i. Surname, first name: Mohammed, Salisu
 - ii. Profession and grade: Lecturer/Professor, PhD
 - iii. Main subject taught: Biogeography and applied plant geography

METHODS AND RESULTS OF THE PREVIOUS ACCREDITATION(S)

The accreditation of the PhD programme in natural resources management and climate change was conducted by the National Universities Commission (NUC) of Nigeria in March 2017.

h. Results:

This programme, which achieved 93.5% overall in the National Universities Commission accreditation exercise, is accredited for a period of 5 years.

HUMAN AND MATERIAL RESOURCES DEDICATED TO THE PROGRAMME

The staff is composed of 22 academic staff (including 10 professors, 6 associate professors 4 senior lecturers and 2 other lecturers), 6 technical staff, 1 senior administrative staff and 3 junior staff.

i. Material resources:

The PhD programme natural resource management and climate change benefits from the CDA and BUK facilities. 19 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;
- Laboratories of the centre (Geographic information system (GIS) laboratory, molecular laboratory, central instrumentation laboratory and a tissue culture laboratory), with specific equipment for PhD students;
- 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 fully equipped with drip and sprinkler irrigation facilities with fullautomation, net houses, screen houses and a greenhouse.

Photographies of lecture rooms, laboratories and the farm, showing equipments 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 open source software and to campus-wide license for a number of software including statistical package. Numerous e-resources are available for students, 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	6	0	5	11	21	6
2016/2017	1	10	0	0	11	21	1
2017/2018	1	3	1	0	5	22	0
2018/2019	1	7	3	1	12	16	0
2019/2020	2	5	3	0	10	60	0
TOTAL	5	31	7	6	49	140	7

It is unclear comparing data on slides presented during the virtual visit and data sent to the experts after the visit.

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, Ph.D. student (Student expert), Université de Technologie de Troyes

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

ON-SITE VISIT DESCRIPTION

- Date of the visit: January 12th and 13th, 2021.

- Organization 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 natural resources management and climate change

Professor Salisu Mohammed
 Professor Yusuf Muhammad Adamu
 Professor Julius Afolabi Falola
 Professor Adamu Idris Tanko
 Dr Murtala Muhammad Badamasi
 Professor Maharazu Alhaji Yusuf
 Dr Bello Gambo

Dr Adnan Abdulhamid
Dr Aliyu Salisu Barau
Professor Nuratu Muhammad
Professor Ahmad Ibrahim Maigari
Dr Ibrahim Badamasi Lambu

Other teachers and scientists from 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)

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 natural resources management and climate change from Bayero University, Kano (BUK) aims to prepare students to become specialists which understand the environmental dynamics of the drylands, to sustainably manage natural resources in the drylands of West Africa, with major environmental challenges. Careers for graduated students are in private or public organizations involved in the management of forest resources, agricultural and land resources, aquatic resources, mineral resources, resource-based energy resources, and other natural resource areas in the drylands of West Africa. It is run by the department of geography (faculty of earth and environmental sciences), in collaboration with the department of soil science (faculty of agriculture), coordinated by the CDA of Bayero University, Kano.

Two PhD courses are included in the programme, a general one on advances in research methods and methodology, and a specific one, chosen by the student as a specialization field linked to her-his research domain of interest. The principle is of major interest for students to drive their works. One elective course on GIS and remote sensing is incorporated into the programme and an internship component allows students to spend a mandatory minimum period of one-month in relevant industry. The PhD programme, designed as full time only, has a minimum duration of 6 semesters and a maximum duration of 10 semesters. Training involves professors, lecturers, technicians from CDA and senior technical staff from private sectors. Students coming from West and Central African Regions can candidate to the training. Within the department of geography, the objectives of the programme are clear and relevant to train specialists in order to meet needs and challenges in natural resources management of dryland regions.

2 – PRESENTATION OF THE PROGRAMME'S SELF EVALUATION APPROACH

The CDA is evaluating its PhD programme natural resources management and climate change 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 Salisu Mohammed, head of department of geography. The self-assessment methodology was based on the Hcéres training evaluation reference system.

IV. EVALUATION REPORT

AREA 1 – THE POSITIONING OF THE DOCTORATE

Natural resource management and climate change are at the heart of the programme, to get in depth understanding of the natural and socio economic elements, of the environmental dynamics of the West African drylands. It is fully on the World Bank priorities. The objective of the doctorate is clear, the programme contents and duration are well defined. The incentive for students to publish results in scientific journals to be graduated should be mentioned in the department postgraduate student handbook to improve the international recognition of works, PhD programme and the centre. The evaluation of training, courses and monitoring is a very interesting process for improvements, but formal feedback is needed to complete the process. The positioning of the doctorate is relevant with fourteen African academic and private partners, including three international universities and economic partners, involved in curricula development, teaching, internship, research and seminars. Co-supervisions of students within research collaborations are effective, by thus strengthening partners interactions.

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

The admission requirements and the doctorate contents are well described in postgraduate student handbook and departmental postgraduate student handbook. Courses with the number of credits are 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.

The PhD programme, designed as full time only, has a minimum duration of 6 semesters and a maximum duration of 10 semesters.

The conditions for the award of degree are mentioned in the handbooks. 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. Scientific publications for students to be graduated should be more encouraged with a mention added in the postgraduate student handbook. It will improve the international recognition of the works, the programme and the centre.

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

The doctorate is run by the department of geography (faculty of earth and environmental sciences), in collaboration with the department of soil science (faculty of agriculture), coordinated by the CDA of Bayero University Kano. The CDA has links with many relevant international institutions: 14 organizations from Nigeria, Ghana, Mali, India, Niger and Morocco are listed as research partners of CDA. 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, 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. It would be interesting to have more concrete details of these collaborations more specifically in the PhD programme.

The CDA organizes biennial international conference on drylands with opportunities for students and staff to meet researchers from all over the world. The centre invites, in addition, 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 – ORGANIZATION AND MANAGEMENT OF THE DOCTORATE

Management and coordination of the doctorate successfully involve scientific, technical and administrative teams. The departmental postgraduate student handbook fully describes the roles and responsibilities of each team member. The CDA website needs to be deeply improved and updated because it is an indispensable tool to disseminate information. The contents of the student handbook is very useful as it well defines the admission level and requirements, application and registration processes, work progress monitoring and evaluation.

49 PhD students were enrolled since 2015 from various backgrounds and different countries, in a very interesting way. The programme starts to meet a real success; it must be encouraged and strengthened. Attention should be retained to the recruitment of foreign students, keeping the gender balance achieved only in 2019. The average number of students enrolled per year since 2015 is 10, which underlines the attractiveness of the programme. 29 grants/fellowships were awarded with a well-specified allocation method. However, the amount of grants is too low, not enough to live on. For Nigerian students, as no scholarships from World Bank could be awarded, an effort is still needed to give them financial support. Valorization of results in international scientific journals should be further encouraged as well as participation in national and international congresses. 7 PhD thesis were defended since 2015: thesis duration must remain under control. .

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

Governance of the doctorate is well described in the handbooks. It is well adapted to its context and objectives. Teaching, technical and administrative staff, from 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, CDA website needs to be improved and updated as it is often mentioned to be useful 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 need to be found more easily and the website could be useful again.

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 student handbooks.

49 students were enrolled from 2015, including 12 women (24%) and 37 men (76%). The number of women has increased over the past five years to reach an equi-repartition 50/50 in 2019-2020. Out of the total number of students, 36 are Nigerian (73%) and 13 come from other African countries (Ethiopy, Kenya, Cameroon, Mali, Niger) (27%). Their initial training is various, and since 2015, 9 students from Msc natural resources management and climate change were enrolled, which is over 18 % of total students. With a constant student number recruited per year from 2015, the selection ratio is 0.35 involving 140 applicants, meaning the programme is becoming more and more attractive. The programme starts to meet a real success and it must be strengthened. An increase in the number of students is still 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, 29 students received a grant/fellowship: ACE Fellowship for students from foreign countries, CDA thesis grants Bayero University PhD Fellowships for Nigerian Students, PASET grant and other forms of scholarship (institutional fellowship other than BUK fellowship). On the other hand, 20 students were self sponsored and financial support seems to be more difficult to get for Nigerian students. Alternative solutions may be found to support registration fees, food and accommodation for Nigerian support.

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. Finding additional financial support is essential to train students in the best conditions.

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 CDA and one from the host Department. 7 thesis have been defended since 2015. It is a very good result. However attention may be paid to the duration of the PhD works and supervisors should be more responsive to student requests.

AREA 3 – SUPERVISION AND TRAINING FOR DOCTORAL STUDENTS

Mutual commitments of students and supervisors are clearly exposed in the postgraduate student handbook: student rules, thesis duration, criteria for authorizing thesis defense, research ethics and scientific integrity are all explicit. Student follow up includes seminars, meetings and regular reports. Students have to choose courses during the first academic session, suited to their profile and career plans. Despite that, thesis duration is too long and student supervision should be improved to become more close and efficient. The possibility to extend scholarships/grants when additional time is required to end the thesis, need to be clearly evaluated and expressed.

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.

The doctorate invites students to take part in supplementary actions, such as scientific events. Two 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 increased, linked to the professional insertion of student, for instance. For each course, the evaluation mode is well specified and reported 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 are clearly expressed in the postgraduate student handbook: the full-time PhD programme in natural resources management and climate change shall run from a minimum duration of 6 semesters and a maximum duration of 10 semesters. In exceptional circumstances, Senate can grant an extension of not more than 2 semesters on the recommendations of the departmental and faculty postgraduate studies committees, and the board of the school of postgraduate studies.

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.

7 students have defended their thesis since 2015. It is a very good result. Attention should be paid to the duration of other students' theses so that they do not exceed the duration initially planned.

AREA 4 – INTEGRATION OF DOCTORS INTO THE JOB MARKET

Links with local, national and international partners (public and private sector) are effective through congresses and workshop organization, internships, mutual courses and access to facilities. A significant event was the first meeting of the sectoral/industry advisory board (SIAB) created by the centre: private partners are then closely associated to the governing structure of CDA to give new inputs.

To support students in their professional integration, the visibility of the doctorate may be improved with more efficient and effective communication tools. The website of the centre may also be updated, as it was not accessible during the virtual visit. Added courses in management and entrepreneurship should be proposed to students with credits. The creation of an alumni network would be useful. Data collection - student name, origin, background, year of graduation, ... - should be regular and data analyses should be effective in order to allow the evaluate of the quality of the doctorate, its economic impact, and the objective assessment.

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 CDA 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 biennial international conference on drylands organized by the CDA and guest lecturers invited from regional and international organizations are of major interest to allow meetings between students and professional actors.

The CDA managers explain that the website, newsletters and social media platforms are useful tools 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 was identified.

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

It is still difficult to have a real view of employment and follow-up of graduates. To promote the integration of PhDs into the job market, courses in management and entrepreneurship should to be included in the programme with credits: they could be precisely described and clearly mentioned in the programme to further prepare professional projects after graduation. Likewise, alumni network should be established and structured to keep in touch with staff and students, and to participate in the dissemination of job opportunities.

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

It is difficult to assess given that the data collected is analyzed and shared with applicants, 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.

However, student data is available. Student name, gender, origin, background, subject of internship and hosted organization, year of graduation are data that were provided to the experts, although this was done after the visit. It should be emphasized that data collection is very important and interesting to assess the quality of the doctorate and its economic impact, to analyze employment data and to keep in touch with graduated doctoral student. Data, collected on a regular basis, could also be provided to local, national and international partners (institutions and socio-economic partners) and then be key factors to increase attractiveness of the programme.

V. CONCLUSION

PhD programme natural resources management and climate change from Bayero University, Kano is designed to train specialists in the management of forest resources, agricultural and land resources, aquatic resources, mineral resources, resource-based energy resources, and other natural resource areas in the drylands of West Africa. It is run by the department of geography (faculty of earth and environmental sciences), in collaboration with the department of soil science (faculty of agriculture), coordinated by the CDA. The objectives are in perfect agreement with the local needs and the World Bank objectives. The network of public and private partners is relevant. Effective organization and management is in place for the doctorate. The objective of the doctorate is clear. The programme contents and duration are well defined as well as the admission level and requirements, application and registration processes, work progress monitoring and evaluation. With 49 PhD students enrolled since 2015, 29 grants/fellowships were awarded with a well specified allocation method. 7 thesis were defended since 2015. The success of the doctorate programme is real and could be strengthened with few actions as an increase in the student number in respect for the student distribution by country of origin and gender. Attention may be payed to thesis duration and supervision. The amount of the grants still remains too low and it should be increased to provide good conditions to live and carry out research works. Elective courses could be expanded to facilitate professional integration of student (management and entrepreneurship). The creation of an alumni network should be done as it will provide a forum to form new friendships and business relationships with people of similar background. The attractiveness of the doctorate programme could be increased with a website deeply improved and updated, with results better valorized through national and international congresses participation and publications in scientific journals.

In conclusion, the team in charge of this training is efficient and the results obtained are of a good level, with a few points of improvements to be made. With the support of the World Bank, these improvements should allow to describe the work carried out by the centre, all the management, teaching and administrative teams, the students and the partners as a full and real success.

TODAY'S CHALLENGES

- Continue recruitment and enhance links with master programmes
- Promote graduate employment and graduate follow-up
- Finish thesis in the laps and enhance results valorization with international reviewed publications and national/international congresses participation
- Improve communication and website

OUTLOOK OF THE FUTURE

- Increase the number of students and extend the student recruitment to regional 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 appropriate teaching facilities for this curriculum
- Learning environment (lecture halls, laboratories, internet connectivity, etc.) and very conducive students' accommodation
- Numerous partnerships both academic and industrial with internship programme
- Gender balance reached in 2019
- Average number of students which is very promising

WEAKNESSES

- Lack of promotion of employment for graduated student
- Duration of the thesis often exceeding the three expected years
- Lack of communication tools as functional website

RECOMMENDATIONS

- Increase, or at least maintain, the number of students with recruitment from regional countries with gender balance
- 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 in the job market
- 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,

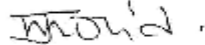
Re: CDA ACE Evaluation Report (PhD in Natural Resource Management and Climate Change)

Thank you very much for sharing the evaluation report of our PhD programme in Natural resource management and Climate Change (NRM&CC). The Centre for Dryland Agriculture (CDA) responds to the comments and recommendations contained in the report as follows:

1. *Increase, or at least maintain, the number of students with recruitment from regional countries with 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. The programme is also one of the programmes supported by the Regional Scholarship and Innovation Fund (RSIF) of the Partnership for Innovation in Science Engineering and Technology (PASET) (<https://www.rsif-paset.org/>). The will guarantee the recruitment of some sponsored regional students into the programme.
2. *Improve monitoring and supervision process to reduce the thesis duration.* The CDA accepts this recommendation. Already the Centre is consulting with School of Postgraduate Studies (SPS) to institute a more rigorous process for tracking and monitoring student-supervisor progress.
3. *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.
4. *Improve the CDA website and promote the doctorate in the job market.* 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 the promote the programme in the job market and to match graduates with opportunities.

5. 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. Jibrin

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
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. Natural Resources Management and
Climate Change**

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

Natural resources management and climate change are at the heart of the programme to get in depth understanding of the natural and socio economic elements of the environmental dynamics of the West African drylands. It is fully on the World Bank priorities. The objective of the doctorate is clear, the programme contents and duration are well defined. The incentive for students to publish results in scientific journals to be graduated should be mentioned in the department postgraduate student handbook to improve the international recognition of works, PhD programme and the centre. The evaluation of training, courses and monitoring is a very interesting process for improvements, but formal feedback is needed to complete the process. The positioning of the doctorate is relevant with fourteen African academic and private partners, including three international universities and economic partners, involved in curricula development, teaching, internship, research and seminars. Co-supervisions of students within research collaborations are effective, thus strengthening partners interactions.

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

Management and coordination of the doctorate successfully involve scientific, technical and administrative teams. The departmental postgraduate student handbook fully describes the roles and responsibilities of each team member. The CDA website needs to be deeply improved and updated because it is an indispensable tool to disseminate information. The contents of the student handbook is very useful as it well defines the admission level and requirements, application and registration processes, work progress monitoring and evaluation. 49 PhD students were enrolled since 2015 from various backgrounds and different countries, in a very interesting way. The programme starts to meet a real success; it must be encouraged and strengthened. Attention should be retained to the recruitment of foreign students, keeping the gender balance achieved only in 2019. The average number of students enrolled per year since 2015 is 10, which underlines the attractiveness of the programme. 29 grants/fellowships were awarded with a well-specified allocation method. However, the amount of grants is too low, not enough to live on. For Nigerian students, as no scholarships from World Bank could be awarded, an effort is still needed to give them financial support. Valorization of results in international scientific journals should be further encouraged as well as participation in national and international congresses. 7 PhD thesis were defended since 2015: thesis duration must remain under control. .

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

Mutual commitments of students and supervisors are clearly exposed in the postgraduate student handbook: student rules, thesis duration, criteria for authorizing thesis defense, research ethics and scientific integrity are all explicit. Student follow up includes seminars, meetings and regular reports. Students have to choose courses during the first academic session, suited to their profile and career plans. Despite that, thesis duration is too long and student supervision should be improved to become more close and efficient. The possibility to extend scholarships/grants when additional time is required to end the thesis, need to be clearly evaluated and expressed.

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

Links with local, national and international partners (public and private sector) are effective through congresses and workshop organization, internships, mutual courses and access to facilities. A significant event was the first meeting of the sectoral/industry advisory board (SIAB) created by the centre: private partners are then closely associated to the governing structure of the CDA to give new inputs. To support students in their professional integration, the visibility of the doctorate may be improved with more efficient and effective communication tools. The website of the centre may also be updated, as it was not accessible during the virtual visit. Added courses in management and entrepreneurship should be proposed to students with credits. The creation of an alumni network would be useful. Data collection - student name, origin, background, year of graduation, ...- should be regular and data analyses should be effective in order to allow the evaluate of the quality of the doctorate, its economic impact, and the objective assessment.

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, or at least maintain, the number of students with recruitment from regional countries with gender balance
- 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 in the job market
- Create and monitor the alumni network and focus on professional integration

SIGNATURE

For HCERES,

Thierry Coulhon, President:



Date: Paris, December 17th 2021



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