

EVALUATION AND ACCREDITATION DOCUMENTS

Master Research Program in Informatics for Climate Change

Joseph KI-ZERBO University

Ouagadougou, Burkina Faso

June 2024

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International evaluation and accreditation

EVALUATION REPORT

Master Research Program in Informatics for Climate Change

Joseph KI-ZERBO University

Ouagadougou, Burkina Faso

February 2024



The WASCAL network (West African Science Service Centre on Climate Change and Adapted Land Use) has mandated the Hcéres to perform the evaluation of the Master Research programme “Informatics for Climate Change” (MRP-ICC) delivered by Joseph Ki-Zerbo University, Ouagadougou. The evaluation is based on the “Evaluation Standards for international study programmes”, adopted by the Hcéres Board on January 31st, 2022. These standards are available on the Hcéres website (hceres.fr).

In the name of the expert committee¹ :

Benoit Gabrielle, President of the committee

In the name of Hcéres¹ :

Stéphane Le Boulter, Acting President

The Higher Council for Evaluation of Research and Higher Education (Hcéres) is an independent public authority. It is responsible for evaluating higher education and research institutions, research organizations, research units, and training programmes.

¹In accordance with articles R. 114-15 and R. 114-10 of the Research Code, evaluation reports are signed by the chairman of the expert committee and countersigned by the President of Hcéres.

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I. STUDY PROGRAMME IDENTITY SHEET

- University: Université Joseph KI-ZERBO (UJKZ)
- Component, faculty or department concerned: Informatics for Climate Change Postgraduate School opened in 2017 (*Ecole doctorale Informatique et changement climatique* – ED ICC)
- Place(s) where the institution is located and the programme is taught:
 - City: Ouagadougou
 - Campus: Zogona
- Precise name of the programme subject to evaluation: Informatics for Climate Change (ICC)
- Level and duration of studies: Master's research program (2 years)
- Year of creation: January 2020.
- Context: The inception of this study programme is related to the creation of the ED-ICC (a Postgraduate School on Informatics for Climate Change) within the host institution, the Joseph KI-ZERBO University, in 2017. The focus of this cross-cutting postgraduate school was a relevant and topical addition to the WASCAL network (see below) and its Competence Centre located in Ouagadougou. The latter provides access to computing facilities and data bases, and develops climate-related services.

This study programme is being implemented in the framework of WASCAL (West African Science Service Centre on Climate Change and Adapted Land Use), a large-scale research-focused service centre, which encompasses 11 West African countries (Benin, Burkina Faso, Cabo Verde, Côte d'Ivoire, Ghana, Mali, Niger, Nigeria, Senegal, Gambia and Togo). The programme is funded by WASCAL and the German Federal Ministry of Education and Research. One student per country is selected and admitted in each batch.

PERSON IN CHARGE OF THE PROGRAMME

- Name, first name: Prof. ZOUNGRANA, Tanga Pierre
- Position held: Director
- Discipline: Geography

RESULTS OF PREVIOUS EVALUATIONS AND QUALITY SYSTEM IN PLACE

This is the first time this programme has been evaluated.

The quality assurance system of the Master Research Programme (MRP) has been built up by the Internal Quality Assurance Unit (CIAQ) of UJKZ. The programme set up an internal evaluation process allowing it to evolve in a process of continuous improvement.

HUMAN AND MATERIAL RESOURCES

- An administrative and technical staff of eight persons, including a programme director and a deputy director, a scientific coordinator, a secretary, an accountant, an IT officer, a janitor and a driver
- A pedagogical team including 26 professors from the host university, other universities from Burkina Faso, and international lecturers and supervisors from West Africa and Europe (Germany in particular)
- A classroom and a computer room
- Access to computing facilities and IT support in the local WASCAL competence centre (in Ouagadougou)

NUMBER OF STUDENTS OVER THE THREE YEARS OF EXISTENCE OF THE STUDY PROGRAMME

		BATCH 1 2019-2020	BATCH 2 2020-2021	BATCH 3 2021-2022
1 st year	M	9	8	8
	F	2	3	3
	Nationals	1	2	1
	Foreigners	10	9	10
	Total	11	11	11
2 nd year	M	-	9	8
	F	-	2	3
	Nationals	-	1	2
	Foreigners	-	10	9
	Total	-	11	11
Graduates	M	-	9	8
	F	-	2	3
	Nationals	-	1	2
	Foreigners	-	10	9
	Total	-	11	10

Average gender ratio over the 3 years: 24.25% women and 75.75% men

II. COMPOSITION OF THE EXPERTS PANEL

- Benoit GABRIELLE, Professor, AgroParisTech, Université Paris-Saclay, Chair of the panel
- Mathilde COLAS, PhD Student, Université de Technologie de Troyes, Student Expert
- Anass NAGIH, Professor, Université de Lorraine
- Vanina PASQUALINI, Professor, Université de Corse.

Hcéres was represented by Pierre COURTELLEMONT, Science Advisor, and Michelle HOUPE, Head of project, Europe and International Department.

III. EVALUATION PROCESS

DESCRIPTION OF THE ON-LINE VISIT

- Date: 26th April 2023
- Organisation of the visit: before the visit took place, the self-assessment report and many appendices had been received by the experts. The on-line visit took place over one day, according to a schedule agreed between WASCAL Centre and the experts' panel. Once written by the panel chair, the report was submitted to all panel members for review.
- Cooperation of the students and institution to be accredited: perfect cooperation by all stakeholders.
- Any problems: no problem was identified.

PEOPLE MET

Day/Hour (Ouagadougou Time)	People met
April 26 th 09:00 – 10:30 am	Meeting with WASCAL-ICC management team: presentation of the training programme
April 26 th 10:30 – 11:30 am	Meeting with a panel of lecturers and supervisors
April 26 th 11:30 am – 1:00 pm	Meeting with a panel of students (batch 3)
April 26 th 2:00– 3:00 pm	Meeting with a panel of academic and professional partners (Agence nationale de la météorologie (ANAM), WASCAL Competence Centre, Institut Géographique du Burkina (IGB))
April 26 th 3:00 – 4:00 pm	Meeting with a panel of former students (alumni from first and second batches)
April 26 th 4:00 – 5:00 pm	Meeting with the Quality Assurance Board of UJKZ

A video showing the workplaces of students (laboratories, practical rooms, documentation or research areas) was also shared with the panel of experts.

Around 30 participants were met during the on-line visit.

IV. OVERALL PRESENTATION

The WASCAL programme was implemented in 2012 with the support of the German Federal Ministry of Education and Research (BMBF). Its main objective is to advance the generation of new knowledge and enhance analytical capabilities regarding climate change. This is achieved through supporting and coordinating the implementation of various doctoral and master's programmes focused on addressing climate change issues. Each country within the network hosts at least one programme. Every batch of each programme trains 11 students representing the 11 partner countries.

The Master's Research Programme (MRP) in Informatics for Climate Change (ICC) is offered by the University Joseph KI-ZERBO (UJKZ), in Ouagadougou (Burkina Faso), as a part of the WASCAL programme. It aims to train experts in data processing to effectively address the challenges posed by climate change. It is hosted by a postgraduate school with the same name, established in 2017. The first MRP batch was launched in 2019 and comprised 11 laureates from the 11 WASCAL partner countries. Therefore, admitted students are organised into small groups and receive comprehensive scholarship package along with budgets to cover various expenses related to their scientific activities, including mandatory international mobility.

The MRP provides students with comprehensive knowledge and skills in data collection, storage, and management with geographical, climatic, and environmental dimensions. It also covers modelling techniques and the production of technical analysis and policy recommendations.

The training is organized into four semesters, each structured with units taught in English. The initial three months focus on language enhancement, where English-speaking students receive French language instruction, and French-speaking students receive English language instruction. The final semester is dedicated to an internship focused on a research topic relevant to the MRP in the student's country of origin. Throughout their thesis work, students receive personalised training from dedicated supervisors and are expected to be prepared for defence by the end of the 4th semester.

PRESENTATION OF THE PROGRAMME SELF-ASSESSMENT APPROACH

The University Joseph KI-ZERBO's (UJKZ) accreditation request pertains to the Master's Research Programme in Informatics for Climate Change. The university submitted a self-assessment report, consisting of a main document available both in English and French, accompanied by an archive containing 23 files such as appendices and internal reports. To develop this material, UJKZ established a committee in July 2022 comprised of members from the local steering team of the WASCAL program. This committee consists of approximately 10 individuals, representing professors, students, administrative staff, and the UJKZ's Internal Quality Assurance Unit (CIAQ). The drafting of the report, following a participatory approach, adheres to the Hcéres reference framework.

V. EVALUATION REPORT

FIELD 1. TRAINING POLICY AND CHARACTERIZATION OF THE STUDY PROGRAMME

The programme aligns closely with the ambitions and primary themes of the WASCAL network, by integrating the challenge of climate change with a specific scientific discipline. Its emphasis on data sciences ensures its originality and relevance when compared to other network programmes. However, it is not connected to existing BSc. programmes from the host university, nor to other UJKZ or national programmes focusing on computer sciences. In fact, although the MRP's title includes "informatics", its core theme revolves around data sciences. Revising the title (by substituting informatics with data sciences) would enhance the identity and visibility of the MRP among the neighbouring programmes, and effectively target its recruitment pool.

Most of the teaching staff originates from other universities than UJKZ (with only two lecturers from UJKZ out of a total of 11 from July to December 2022). The main contribution of the host university lies in thematic applications of informatics to address issues in various fields or disciplines. The ICC postgraduate school was established in 2017 as a cross-faculty entity aimed at ensuring this multidisciplinary approach. This underscores the substantial support provided to the MRP by the host institution. However, the 2023-2027 strategic plan for research does not mention the ICC-MRP.

Thanks to the WASCAL network, the ICC-MRP benefits naturally from strong partnerships. The added value is observable at the pedagogical team level, which includes professors from various countries of the WASCAL network such as:

- Niger: Université Abdou Moumouni University
- Benin: Abomey-Calavi University
- Nigeria: The Federal University of Technology, Akure
- Germany: University of Würzburg and Georg-August Universität Göttingen.

However, the host university does not include laboratories or research centres directly associated with informatics or data sciences.

In addition to its international recruitment efforts, the MRP funds research internships in partner countries across Western Africa and Germany, along with facilitating student participation in international conferences. It also provides students with a monthly stipend and equips them with a laptop. Overall, ICC students benefit from satisfactory material conditions.

As per the WASCAL policy, the MRP includes scientific research and integrity courses. The program claims to consider the socio-economic needs and to interact with local actors, although few such partners have been identified. Some contributed in the supervision of a few MRP interns, and even considered extending these collaborations in the context of Ph.D. projects.

The upcoming opening of a doctoral training programme on the same topic may lead to a transfer of fundings at the expense of the MRP. This critical risk to the MRP sustainability is yet unresolved, and an in-depth reflection on a long-lasting economic model is ongoing.

To conclude, the Master's Research Programme on Informatics for Climate Change (MRP-ICC) aligns well with the ambitions of the WASCAL network, boasting a highly-relevant and cross-cutting focus on data sciences. This uniqueness distinguishes it from other WASCAL programmes; however, its title and positioning vis-a-vis other programmes focusing on data sciences and their application to climate change remains somewhat unclear. The MRP fosters international mobility for students by funding research internships in Western Africa and Germany, as well as supporting their participation in international conferences. The host university does not include laboratories or research centres directly linked with informatics or data sciences. The MRP relies on external research centres and partners for research. It has only interacted with a few socio-economic partners so far.

FIELD 2: THE PEDAGOGICAL ORGANISATION OF THE PROGRAMME

According to the curriculum and the MRP's concept note, the students are expected to acquire adequate knowledge in:

- climate and environmental data storage and management,
- climate data analysis techniques and provision of climate data service,
- the use of open source and licensed climate data analysis packages and models.

The course programme is consistent with the objectives of the MRP. It involves a total of 22 modules and a range of pedagogical modalities which are well suited to the knowledge and skills targeted: online lectures (which is the case for most professors from foreign countries) or face-to-face, practical work, field visits, immersion courses, conferences, and reinforcement seminars grouped over a few days. However, students complained about the lack of direct interaction with remote professors. Another difficulty noted is the English language proficiency of local lecturers. Students also rely on the local WASCAL competence centre, which provides high-performance computing facilities, access to centralised WASCAL databases, and Information technology support in general. Thus, graduate students enjoy adequate and satisfactory learning conditions.

However, the MRP lacks a skill-based approach, especially for skills related to information and communication technologies (ICT). Also, the modalities to acquire these competences and the progressive specialisation of students around ICT have not been formalised yet.

While the inclusion of course units on environmental and climate sciences at the outset of the programme introduces the specificities of climate change, it may not be sufficient to assert interdisciplinarity at the MRP level. Admitted candidates come from various bachelor's degree courses (computer science, agronomy, social sciences, physics, natural sciences, or engineering sciences). To address the heterogeneity of these curricula, makeup classes are occasionally conducted by professors on a voluntary basis. However, establishing a formal mechanism to harmonize knowledge appears essential to facilitate students' integration more effectively.

Students are given the possibility of carrying out their final research project in other West African countries and to participate in international conferences, which fosters their international exposure. The emphasis on soft skills and the English language boost their capacity for mobility, including outside of West Africa.

To ensure that it is in line with socio-economic needs, the programme includes external professional staff, mainly from national institutes such as the Met Office of Burkina Faso (ANAM), its Geography Institute (IGB), or the National Council for sustainable development as well as technical services in Ministries of Water resources, Energy, Transport.

So far, only a few partners have been identified, which contrasts with the broad scope of the MRP in terms of potential applications (in agriculture, forestry, water and natural resource management, financing/assurance sector etc.). Nevertheless, the research topics tackled by students in the third batch are closely aligned with climate related socio-economic challenges in Burkina Faso. These topics have the potential to inform public policy in various areas, such as:

- Assessing the impact of climate change and conflicts on migration in Burkina Faso
- Predicting particulate air pollution in Ouagadougou using satellite Aerosol Optical Depth and meteorological parameters
- Analysing the recent evolution of drought pockets in Burkina Faso and implications for agriculture
- Evaluating the impact of climate change variables on groundwater resource in Burkina Faso.

To conclude, the course programme is consistent with the objectives of the MRP, and involves diverse and suitable pedagogical modalities. However, it lacks a skill-based approach, especially for skills related to information and communication technologies. Establishing a formal mechanism to harmonize prerequisite knowledge among students from various disciplinary backgrounds appears essential to facilitate their integration effectively. Master's students are adequately prepared for international mobility, which is an integral part of their curriculum. Courses involve only a limited number of socio-economic partners, considering the broad potential scope of applying data sciences to climate change issues.

FIELD 3: THE ATTRACTIVENESS, PERFORMANCE AND RELEVANCE OF THE PROGRAMME

The MRP-ICC team disseminates information about its programme through its website, social media, and during the graduation ceremony. However, to improve its qualitative attractiveness, additional targeted actions should be directed toward universities offering relevant bachelor's curricula. Proactive outreach efforts should be made to directly engage potential candidates.

Over the first three batches, the number of applications has increased from 66 to 135, particularly for female candidates between batch 1 (16 applicants) and batch 2 (85). However, closer observation reveals a gender bias for the 3rd batch: 3 women were selected out of 120 candidates, while 8 men out of 15 candidates were retained. The reasons for this bias and the possible levers to correct it in the applications have not been analysed yet.

The quarterly and semester report by batch report on the situation (difficulties encountered) and progress (objectives achieved in percentage) of each student. Actions are proposed to deal with each of the situations and issues arising. It should be noted that around 20 supervisors were involved in the supervision of the master thesis for each batch. Nevertheless, there is no specific service responsible for internships.

The reports and results are posted and made public at the end of the jury's deliberations. The success rate is 100%.

Graduates' follow-ups and contacts with alumni are done through social media and emails. Only batch 1 graduates have been surveyed in terms of job integration. The survey shows that the jobs held by graduates are in line with a Master's degree level. The job market has been analysed by the MRP management in very generic terms.

To conclude, the MRP currently relies on generic channels to advertise its curriculum, resulting in variable responses that require further clarification. Notably, women are under-represented in the students' batches. Despite this, all Master's students have successfully completed the programme so far. However, there is a need to enhance job integration surveys and refine the identification of job markets for graduates.

FIELD 4: MANAGEMENT AND CONTINUOUS IMPROVEMENT OF THE STUDY PROGRAMME

The MRP is financially supported by WASCAL which receives funding from the BMBF (German Federal Ministry of Education and Research), enabling it to provide dedicated support staff and resources with clearly defined functions. The programme is managed by a pedagogical team, whose composition and responsibilities are also well-defined. An international scientific committee provides advice and guidance to the programme. However, the extent of participation of the students-elected representative in the governance structure remains unclear.

Quarterly financial reports are issued, as per the WASCAL policy. The program also produces semi-annual and annual self-assessment and monitoring reports by action plans aimed at addressing identified weaknesses. For instance, a semi-annual report may pinpoint difficulties in adhering to projected schedules. To mitigate such delays, consultations with professors and stakeholders should be intensified, allowing for the development of contingency plans if necessary.

Lecturers receive training to strengthen their skills relevant to their areas of expertise within the MRP. They also have the opportunity to visit other institutions and immersing themselves in up-to-date education and research environments. For instance, there was a massive participation from staff and students during the second edition of the WASCAL international Scientific Symposium (WASS) held at Ouagadougou from the 6th to the 10th of December 2022.

Students are invited to evaluate their professors through a name sheet pre-established by the WASCAL headquarters. The feedback of this evaluation on the MRP improvement is not formalised as a quality process. This procedure should be improved, and its results systematically shared with lecturers and MRP stakeholders. It would be even more effective to use anonymous forms and distinguish between the evaluation of teaching by students and of the overall training curriculum by alumni.

To conclude, the MRP is managed by a pedagogical team whose composition and responsibilities are well-defined. It is financially supported by the German Federal Ministry of Education and Research, which provides dedicated support staff and adequate resources for all aspects of the programme. Efforts should be made to prevent changes in schedules and minimise delays. The formalisation of student feedback and course evaluations within the MRP's quality assurance process requires improvement.

VI. CONCLUSION

The Informatics for Climate Change Master's Study Programme (ICC MRP) demonstrates thematic coherence by integrating theoretical fundamentals with practical training. Its strength lies in the fusion of thematic knowledge regarding the impact of climate change with data analysis and management tools. The scientific objectives are generally well established. However, a gap arises in practice between the programme title "informatics" and the roles adopted by the Graduate Study Programme (GSP) alumni, who often describe themselves as "data scientists". Providing a precise delineation of the GSP's objectives in terms of employment, professional integration, and further studies would improve alignment between the Master's objectives, the actual needs of the socio-economic world, and the aspirations of the students. It would also allow a better guidance for prospective candidates during the admission process. Recruitment data indicate a growing interest in the programme, with an increasing number of applications, particularly from women. However, the proportion of women admitted remains limited.

The multidisciplinary nature of the ICC MRP is evident from its course plan and overall structure. It has established links with a few organisations, highlighting its socio-economic relevance, primarily through the achievements of graduates from the first batch and contributions from external lecturers. However, due to the programme's recent inception and the availability of professional integration data limited to graduates from the initial batch, a comprehensive assessment of its job market potential is not feasible. In particular, it hampers a thorough reflection on the need for the GSP to evolve into a doctoral programme, which is currently under consideration.

The latest developments of the ICC training path and its structure show the ability of the teaching team to coordinate, adapt and deploy distance learning as needed. Still, it is necessary to harmonize the acquisition of scientific prerequisites at the start of the training, akin to the initial language-training period. The MRP management should systematically integrate the results of course and programme evaluations by students or graduates, analyse the findings, and relay them to the teaching team to establish a continuous improvement loop.

STRENGTHS

In general, for the WASCAL network

- A well-structured international network of partner universities that ensures high-quality recruitment of Master and PhD students at the international level and a top-level opportunity for capacity-building across West Africa on climate change.
- A thematic focus on a cross-cutting topic with high societal and scientific relevance to West Africa, in line with well-established needs for public and private decision-making as well as research and higher education.
- An efficient foreign languages and inter-cultural training.
- An efficient organisation with adequate support in terms of financial means, human resources, and infrastructure.

Specific points to ICC MRP

- A strong support from the host institution through the creation of a dedicated, cross-faculty postgraduate school
- A training pathway aligning with international standards
- A multidisciplinary approach fostering the data science interface with climate-related disciplines and topics
- A very high success rate coupled with personalised support for students throughout their learning journey.
- A pedagogical team supported by both national and international networks comprising well-renowned partners.

WEAKNESSES

- A title and a positioning to be clarified and better adapted to the curriculum of the programme
- A lack of skill-based approach.

- A lack of a formal monitoring of teaching and training evaluations by students.
- An absence of a formal system for upgrading and harmonizing the scientific knowledge of incoming students.
- A lack of a research centre directly relevant to the programme's theme at the host university.
- An insufficient number of professors involved locally.

RECOMMENDATIONS FOR THE INSTITUTION

- Adjust the programme's title to reflect its core foci and objectives.
- Increase the proportion of women in the Master's recruitment through an in-depth analysis of applications.
- Formalise the use of data collected via students' feedback forms to ensure a continuous improvement of courses.
- Deploy a skill-based approach in the training programme.
- Implement a harmonized approach to enhancing scientific knowledge to better leverage the diversity of incoming students' backgrounds, akin to the approach employed for English and French language instruction.
- Consolidate the local teaching team and strengthen links with the relevant research laboratories of UJKZ.

VII. OBSERVATIONS OF THE INSTITUTION

AO/GD

MINISTRE DE L'ENSEIGNEMENT SUPERIEUR, DE LA
RECHERCHE ET DE L'INNOVATION

SECRETARIAT GENERAL

UNIVERSITE JOSEPH KI-ZERBO

PRESIDENCE

ECOLE DOCTORALE INFORMATIQUE ET
CHANGEMENT CLIMATIQUE
(ED-ICC)



BURKINA FASO

Unité - Progrès - Justice

Ouagadougou, le 27 MAR 2024

N° 2024-0000061 MESRI/SG/UJKZ/ED-ICC

The Director

To

Mr Stéphane Le BOULER
Acting President of Hcéres

Object: Acknowledgment of receipt of the external evaluation report

Mr Acting President,

We hereby renew our thanks and our great satisfaction for having been evaluated by your institution.

This process, through self-assessment and evaluation by HCERES experts, gave us the opportunity to identify the strengths and weaknesses of our Master's program Informatics for Climate Change. These results will guide us in the implementation of improvement actions with the ambition to continually meet international quality standards.

We acknowledge receipt of your evaluation report and share with you an attached document of some strategic observations.

Wishing you good reception, we reassure you that the necessary arrangements have been made to implement the recommendations resulting from the evaluation.

Please accept, Mr. Acting President, our cordial greetings.

Annex: strategic observations on
the Hcéres evaluation report



Prof. Amadé QUEDRAOGO
Chevalier de l'Ordre des Palmes Académiques

Annex: Strategic observations

I. SPECIFIC POINTS TO ICC MRP

1. *A strong support from the host institution through the creation of a dedicated, cross-faculty postgraduate school.*

We are very satisfied that this point has been noted, and we add the fact that the site hosting the Master program in Informatics for Climate Change is a donation of the Université Joseph KI-ZERBO.

II. WEAKNESSES

1. *A title and a positioning to be clarified and better adapted to the curriculum of the programme*

The observation is relevant and we would like to reassure you that we are in the process of adopting a new name for the Master program in order to better align it with the content of the curriculum.

Furthermore, at the Université Joseph KI-ZERBO, there are departments and research laboratories whose training courses and research axes are linked to the ICC Master's curricula. They already contribute through their lecturers and researchers to the academic activities of the Master (recruitment process of students, supervision, defense jury, training).

2. *A lack of skill-based approach.*

This observation is relevant, and we will initiate remedial actions by reflecting on the profiles of graduates in relation to the training received.

3. *A lack of a formal monitoring of teaching and training evaluations by students*

Regarding this point, during our interviews, it was recommended that the lecturers evaluation sheets by the students be anonymized, which has already been taken into account by the development of a new sheet for all the schools of WASCAL. In terms of monitoring, we reassure you that procedures will be put in place to take advantage of the processing and analysis of the training evaluation.

4. *An absence of a formal system for upgrading and harmonizing the scientific knowledge of incoming students.*

On this point, we reassure you that your concern will be taken into account. Like what is done for language courses, we will integrate other upgrading courses for selected students.

5. *A lack of a research centre directly relevant to the programme theme at the host university.*

The texts of the Université Joseph KI-ZERBO state that laboratories are grouped into research centers. In this perspective, there are laboratories whose research topics are related to climate change and which are direct collaborators of our Master program.

6. *An insufficient number of professors involved locally.*

Indeed, we are aware that few lecturers of the Université Joseph KI-ZERBO are involved in the implementation of the Master program. This is not due to the lack of local expertise, but rather to the language barrier (the courses being in English) which we will work to overcome.

III. RECOMMENDATIONS

We positively appreciate the recommendations, and we will take them into account in future actions to improve the quality of our program.

The evaluation reports of Hcéres
are available online : www.hceres.com

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ACCREDITATION DECISION

Master Research Programme of WASCAL in Informatics for Climate Change

Joseph KI-ZERBO University

Ouagadougou, Burkina Faso

June 2024

SCOPE OF THE ACCREDITATION GRANTED BY HCÉRES

HCÉRES has based its evaluation process on a set of objectives that study programmes must pursue to ensure recognised quality within France and Europe. These objectives are divided up into four accreditation criteria.

The Accreditation Commission issues an opinion about the accreditation of the study programme after examining the file. The Hcéres President takes the decision based on the Commission's opinion and the final evaluation report of the programme. This accreditation decision, taken in plenary session, is the result of a collegial and reasoned process.

The decision issued by Hcéres regarding the accreditation of the study programme corresponds to the awarding of a label to the evaluated entity.

This decision is independent of the accreditations carried out by the French State and therefore does not entail recognition in France of the institution or the diplomas issued by it.

Decision No. EI-2024-25 on the accreditation of the WASCAL Master Research Programme in Informatics for Climate Change delivered by Joseph Ki-Zerbo University, Ouagadougou, Burkina Faso

The President of the High Council for the Evaluation of Research and Higher Education,

Considering the Research Code, in particular Articles L. 114-3-1 to L. 114-3-6;

Considering the Board's deliberation of 29th September 2022 on the accreditation criteria for international study programmes (except doctorates/PhDs);

Considering the Decision No. 2023-9 of 16th March 2023 on the international accreditation procedure of the High Council for the Evaluation of Research and Higher Education;

Considering the agreement DEL_20220407 of 12th May 2022 - for the evaluation/accreditation of seven training courses, delivered by training and research centres affiliated to the WASCAL network in seven sub-Saharan African countries;

Having regard to the opinion of the Accreditation Commission of 25 April

Considering the opinion issued by the Accreditation Commission on 25th April 2024;

Decides:

Article 1

Noting that the Master Research Programme in Informatics for Climate Change delivered by Joseph Ki-Zerbo University in Burkina Faso meets the four accreditation criteria, voted by the Board of the High Council on 29th September 2022, as follows:

ACCREDITATION CRITERION 1: TEACHING POLICY AND CHARACTERISATION

The Master's Research Programme on Informatics and Climate Change (MRP-ICC) aligns well with the ambitions of the WASCAL network, boasting a highly-relevant and cross-cutting focus on data sciences. This uniqueness distinguishes it from other WASCAL programmes; however, its title and positioning vis-à-vis other programmes focusing on data sciences and their application to climate change remains somewhat unclear. The MRP fosters international mobility for students by funding research internships in Western Africa and Germany, as well as supporting their participation in international conferences. The host university does not include laboratories or research centres directly linked with informatics or data sciences. The MRP relies on external research centres and partners for research. It has only interacted with a few socio-economic partners so far.

ACCREDITATION CRITERION 2: THE PEDAGOGICAL ORGANISATION OF THE STUDY PROGRAMME

The course programme is consistent with the objectives of the MRP, and involves diverse and suitable pedagogical modalities. However, it lacks a skill-based approach, especially for skills related to information and communication technologies. Establishing a formal mechanism to harmonize prerequisite knowledge among students from various disciplinary backgrounds appears essential to facilitate their integration effectively. Master's students are adequately prepared for international mobility, which is an integral part of their curriculum. Courses involve only a limited number of socio-economic partners, considering the broad potential scope of applying data sciences to climate change issues.

ACCREDITATION CRITERION 3: ATTRACTIVENESS, PERFORMANCE AND RELEVANCE OF THE STUDY PROGRAMME

The MRP currently relies on generic channels to advertise its curriculum, resulting in variable responses that require further clarification. Notably, women are under-represented in the students' batches. Despite this, all Master's students have successfully completed the programme so far. However, there is a need to enhance job integration surveys and refine the identification of job markets for graduates.

ACCREDITATION CRITERION 4: MANAGEMENT AND CONTINUOUS IMPROVEMENT OF THE STUDY PROGRAMME

The MRP is managed by a pedagogical team whose composition and responsibilities are well-defined. It is financially supported by the German Federal Ministry of Education and Research, which provides dedicated support staff and adequate resources for all aspects of the programme. Efforts should be made to prevent changes in schedules and minimise delays. The formalisation of student feedback and course evaluations within the MRP's quality assurance process requires improvement.

Article 2

The Master Research Programme in Informatics for Climate Change delivered by Joseph Ki-Zerbo University in Burkina Faso is accredited for a period of 3 years, which may be extended for two years, subject to a follow-up that may include an on-site visit.

Article 3

The decision is accompanied by the following recommendations and comments:

- Adjust the programme's title to reflect its core foci and objectives.
- Increase the proportion of women in the Master's recruitment through an in-depth analysis of applications.
- Formalise the use of data collected via students' feedback forms to ensure a continuous improvement of courses.
- Deploy a skill-based approach in the training programme.
- Implement a harmonized approach to enhancing scientific knowledge to better leverage the diversity of incoming students' backgrounds, akin to the approach employed for English and French language instruction.
- Consolidate the local teaching team and strengthen links with the relevant research laboratories of UJKZ.

Article 4

This decision will be published on the Hcéres website.

Paris, 14th June 2024.

The acting President
signed

Stéphane Le Boulter

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