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Review of the higher education system in Benin: Status, challenges, opportunities and strategies for improvement

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ABSTRACT

The present study was executed to assess the current status of the higher education sector in Benin. Documentary review method was used to collect data and were complemented by surveys. Data obtained were synthesized in form of graphs and tables. Results showed that political decision sustains education systems of Benin. Benin has seven public universities and the University of Abomey-Calavi remains the most populous university with high annual students' recruitment. Some innovations have been proposed to improve the higher education system in Benin which remain insignificant compared to the current challenge that the system is facing. Apart from national subvention, several other partners contribute to funding the higher education system in Benin. However, the vision and mission of the donors remain very divergent. Yet it is necessary to rethink the current system and implement some strategic actions towards contribution of the system to higher productivity and meet development goals.

Key words: Benin, funding, Higher education, LMD, West Africa

RÉSUMÉ

La présente étude a été menée afin d'évaluer l'état actuel du secteur d'enseignement supérieur au Bénin. La méthode de revue documentaire a été employée afin de collecter les données auprès des acteurs à travers des entretiens. Les données obtenues ont été synthétisées sous la forme de graphiques et de tableaux. Les résultats ont révélé que le système d'éducation au Bénin est sous l'influence des décisions politiques. Il existe actuellement au Bénin sept universités publiques parmi lesquelles l'université d'Abomey-Calavi reste la plus importante avec un effectif très élevé d'étudiants inscrits annuellement. Quelques réformes ont été proposées afin d'améliorer le système d'éducation au Bénin. Toutefois, elles restent très insignifiantes au regard des défis actuels auxquels le système fait face. Le système bénéficie des subventions nationales souvent complétées par celles des organismes/institutions internationaux. Cependant, la vision et la mission des donateurs demeurent très divergentes. Il urge donc de repenser le système actuel et surtout mettre en application quelques actions stratégiques afin de permettre une meilleure productivité et surtout atteindre les objectifs de développement.

Mots clés : Bénin, financement, enseignement supérieur, LMD, Afrique de l'Ouest

INTRODUCTION

Higher education is increasingly being recognized as a critical aspect of the development process, especially with the growing awareness of the role of science, technology and innovation in economic renewal (Astin, 2012). While primary and secondary education have

been at the focus of donor community attention for decades, higher education has been viewed as essential to development only in more recent years (Tight, 2012). In African countries, higher education needs to be transformed so that it produces the graduates and research that will increase the use of science,

technology and innovation for economic growth and ensure an Africa that is food secure. As such, universities have a key role to play in producing the next generation of the African workforce, including researchers/scientists, extension and advisory service practitioners that are expected to generate, translate, extend and share knowledge with rural farmers to increase agricultural productivity, agribusiness and incomes. Universities should also ensure that students appreciate the relationships between science, technology, innovation and development, and are sensitive to societal needs. Such approach is based on the strong interdependence of academia, industry and government (TeFerra and Altbachl, 2004). This is consistent with the vision of the Government of Benin in which everyone should benefit from quality education and learn the values, behavior and lifestyles required for a sustainable future for positive societal transformation

Research has shown the returns to investment in higher education are around 20%, and in Africa closer to 30% (Montenegro and Patrinos, 2013). Moreover, investments must be targeted to ensure the development of strong local post-graduate programmes and to transform universities so that they use modern technologies applied to local situations to provide the human resources that Africa needs for tomorrow (Cochran-Smith and Zeichner, 2010). Although higher education enrolment and graduation rates have increased, considerably gross enrolment ratios remain low, with only 6% of Africans enrolled in universities (Bloom *et al.*, 2006) compared to 40% in Latin America and 94% in North America. Furthermore, the increase has come at the expense of quality with expenditure per student falling significantly. There is thus an urgent need to invest in higher education and for higher education to transform itself to produce the quality of graduates and knowledge needed to achieve the African Unions Agenda 2063.

Agriculture sector continues to play an important role in achieving these goals in Africa, employing over 60% of local populations, and contributing on average over 30% to GDP (RUFORUM, 2015). This importance of Agriculture has been highlighted in international organizations (NEPAD, African Union, UNESCO and RUFORUM) priorities for Higher education and especially agricultural education. As such several international meetings on strengthening Higher Agricultural Education in Africa are held through which actions required to strengthen the sector in Africa are proposed. However, the current expansion in both public and private higher education system in Africa without strategic reform is not likely to achieve the Agenda and respond to the challenges the agriculture sector is facing. As such new strategic plans are needed

to build high-quality and produce relevant postgraduates, and provide technology platforms and the “skills revolution” needed for universities to be leading actors in agricultural transformation in the continent.

The current study aimed to provide information on how higher education system contributes to sustainable development in Benin; how the system has been funded over the years; the existing gaps in the system and insights on how their strategic role could be strengthened and further developed for a sustainable future. This will be useful for many African countries and regional policies which recognize higher education especially in the agriculture as the backbone of their economies but which do not explicitly link agricultural education to the ambitions to achieve rural or agro-industry development.

Study area

The Republic of Benin is a West African country located between 6°25' and 12°25' N. The country encompasses several socio-linguistic groups (Fon, Yoruba, Dendi, Bariba and Waama are the major groups) who hold an outstanding knowledge on the natural resources within the country. In Benin, approximately 70 % of the residents live in rural areas where they use natural resources for their routine needs (food, medicine, craft, firewood and construction) (INSAE, 2015). Public universities are located in main towns of the country (Figure 1). The country is split into three biogeographical zones: the Guinean zone (between 6°25' - 7°30' N), the Sudano-Guinean zone (between 7°30' - 9°45' N) and the Sudanian zone (between 9°45' - 12°25' N).

In the Guineo-Congolese zone the rainfall is bimodal with a mean annual rainfall of 1200 mm. The mean annual temperature varies between 25°C and 29°C and the relative humidity between 69 % and 97 %. The soils are either deep ferralitic or clayey and rich in humus and minerals. The vegetation is made of dense semi-deciduous forests and Guinean savannas. The rainfall in the Sudano-Guinean zone is unimodal, from May to October, and lasts for about 113 days with an annual total rainfall varying between 900 mm and 1110 mm. The annual temperature ranges from 25°C to 29°C, and the relative humidity from 31 % to 98 %. The soils in this zone are ferruginous with variable fertility. The vegetation of the Sudano-Guinean transition zone is characterized by a mosaic of woodland, dry dense forests, tree and shrub savannas and gallery forests. In the Sudanian zone, the mean annual rainfall is often less than 1000 mm and the relative humidity varies from 18% to 99% in August. The temperature varies from 24°C to 31°C. The Sudanian zone has hydromorphic soils, well-drained soils, and lithosols.

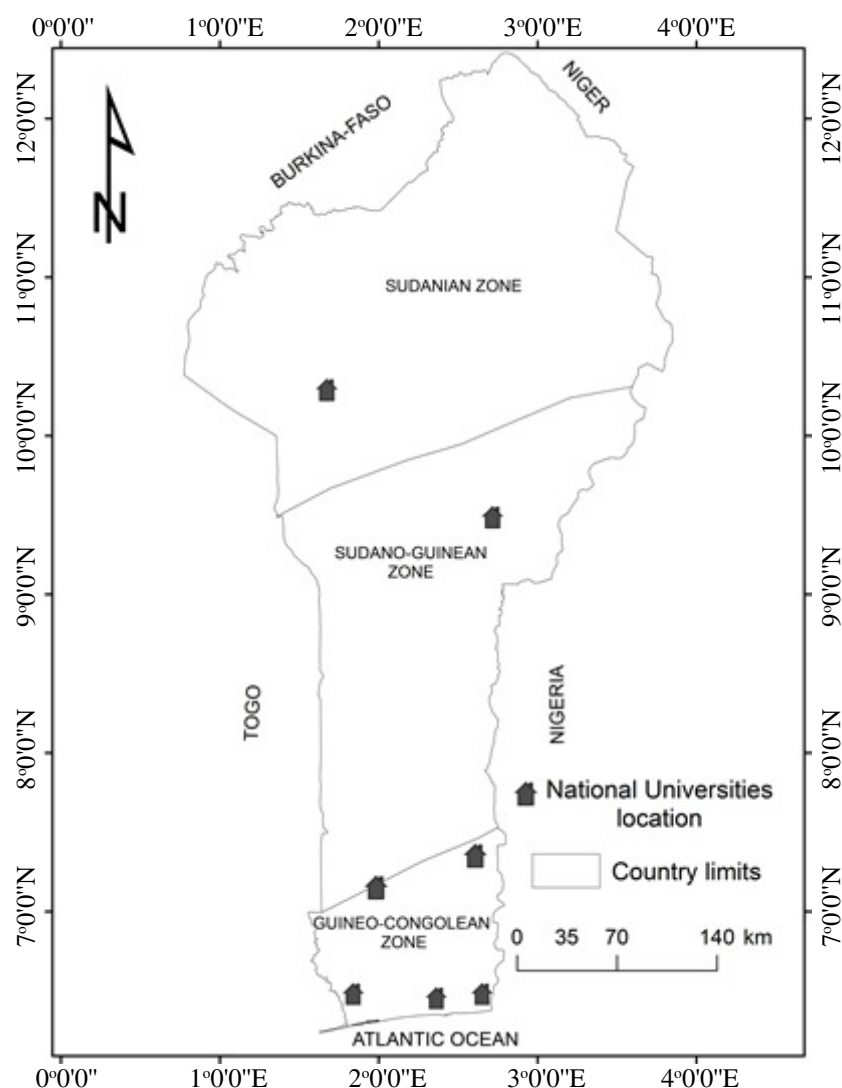


Figure 1: Map of Benin showing the biogeographical zones and location of main public universities

The vegetation of this zone is mainly composed of savannas with trees of smaller size.

MATERIALS AND METHODS

In order to assess the current status of the higher education sector in Benin to identify current challenges and gaps and develop specific recommendations towards enhancing their performance and their contribution to the science, technology and innovation at national level, the following activities were undertaken:

Data collection

The documentary review method was used to collect data. Documentary review is a method of research that involves the analysis of texts and documents that contain data that is pertinent to the research problem (Enders, 2004). Data were gathered from main libraries from the different universities, ministries in charge of national educations, and alphabetization. We also retrieved data from the internet using the computer search function provided by Google and Google Scholar

using key search terms such as “higher education system in Benin; financing the higher education system in Benin, the challenges/problems facing Benin’s higher education system”. More importantly, surveys were conducted with responsible in charge of education in ministries, the responsible of faculties or institutions in charge of education (Deans, Vice-Deans, and human resources manager), faculty or school members, responsible in Ministry of Higher Education, Public services, Secondary College of Agriculture, and Chief of International Cooperation Officer at Universities. The research questions investigated during the surveys included the following:

- (i) *What is the current state of the Higher Education in Benin?*
- (ii) *What are the current statistics available on Higher Education in Benin?*
- (iii) *What are the gaps and challenges for Higher Agricultural Education, particularly in the various science related faculties?*

- (iv) *What do national universities need to do in order to meet the articulated demand for high quality skills and research that is needed to achieve a food secure and prosperous Africa?*
- (v) *What adjustments need to be done in the Higher education system to help for the sustainable development in Benin?*
- (vi) *In which area and how can we incorporate new approaches to Higher Education especially Higher Agricultural Education Sector system in order to stress its role for the sustainable development?*

Data analysis

The data obtained through literature review and the surveys were synthesized to answer the abovementioned questions. Graphs and tables were used to present results using the Excel spreadsheets. Findings presented in the current report are organized into three distinct sections. Section 1 of the report

presents the state of the Educational system in Benin through an overview, the organization of the education system and the schooling system in Benin. Section 2 presents the higher education system in Benin (organization, priorities in the field, improvement in the system and the funding sources). Section 3 focusses on the Higher Agricultural Education Sector, and presents the funding sources, gaps and challenges in the system.

RESULTS AND DISCUSSION

State of the Educational system in Benin: From a historical perspective

Table 1 summarizes the higher education system in Benin from colonial period to date; while Figure 2 shows the structure of the higher education system in Benin. Indeed, political decision sustains education and research systems in Benin. Several ministries are involved in the education system in Benin. Unfortunately, all those ministries are autonomous and

Table 1: Brief summary of education and research history in Benin

Period	Characteristics
From colonial period till 1976	<p>Research and education sectors were under the supervision of the Republic of France As such a similar teaching and research programme as in France was designed in French institutes: Institut Français d'Afrique Noire (IFAN), Institut de Recherche, etc.</p> <p>Agronomique Tropicale (IRAT) for all West African French speaking countries and teaching and research were mostly performed by teachers and researchers from France. They were sent to Africa as missionaries</p>
1976-1986	<p>The Department for Scientific and Technical Research (DRST) under the Ministry of Education was created in the Republic of Dahomey (current Benin). All the activities carried out by the French institutes were fully transferred to the abovementioned department. Thereafter, other research institutes were created but there were no formally established links and coordinated actions between those institutes and the DRST. No coordination and control within the education system of the country was set in place.</p>
1986-1992	<p>A key event in the reform of education in Benin was the national Conference on Education (Etats Généraux de l'Education-EGE) held in 1990 which adopted a national policy and strategy to improve education. Beginning in 1991, the government of Benin introduced significant changes within the Beninese education system. A National Council for Scientific and Technical Research (NCSTR) was created to improve the role and fill the gap that the DRST was encountering</p>
1992 to date	<p>All research and education activities are directly managed by the Ministry of Education (primary, secondary, and higher education) and national scientific research institutes within the country. Major advances have been made in education, especially in the areas of access and teaching/learning conditions. The gross enrollment rate has increased from a base of 49.7% in 1990 to 96% in 2004 and girls' enrollment from 36% in 1990 to 84% in 2004. Gender balance and geographic equity have shown significant improvements in gross numbers of girls and children from disadvantaged areas attending primary schools. Nonetheless, major constraints and challenges remain.</p>

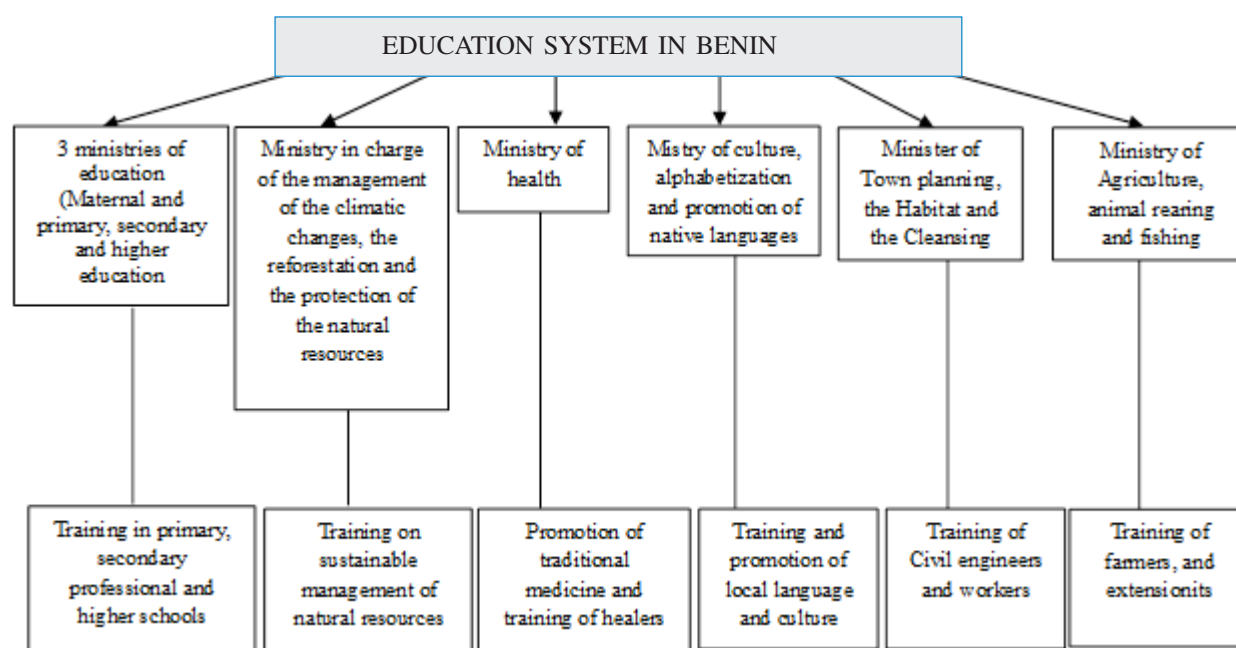


Figure 2: Organization of the education system in Benin

there was no consensual work among them. Generally, no real coordination actions have been developed for scientific research and education in Benin. As a consequence, there was no existing formal link between the different levels of education hence no linkage between the needs for local development and the education systems in the country.

Schooling system in Benin

The Republic of Benin operated a 6-4-3-3-2-3/4 system:

- (i) Primary school: 6 years
- (ii) Junior high school: 4 years
- (iii) Senior high school: 3 years
- (iv) Bachelor's degree: 3 years
- (v) Master's degree: 2 years
- (vi) Doctoral degree: 3-4 years

Education is compulsory for children between ages six and eleven. After spending two to three years in kindergarten, they took six years to complete and take the primary school certificate. Overall it was required seven years to complete both junior and senior high school. At the end of the four first years of junior high school, the students had to take the O-level (Brevet d' Etudes du Premier Cycle: BEPC). Then after three years the students had to take the A level (Baccalauréat: BAC) exam which was the equivalent of the U.S. high school diploma. Some take university studies and got their BSc after 3 years of study and their Master 2 years after the Bachelor degree. Only those willing could further study for their doctorate for a total of three to four years studies depending on the programme and the graduation school.

Although its education system used not to be free, Benin had abolished school fees (especially at Primary level) and is today carrying out the recommendations of its 2007 Educational Forum. While enrollment rates indicated a level of commitment to education, they do not always reflect children's participation in school. An increase is currently noticed in the enrollment rate. The overall adult literacy rate is nearly 40% with only 25% of literate women (World Bank Group, 2012).

Higher education system in Benin

Tertiary education in Benin was administered by the "Higher Education Law" Education Act 75-30. The Presidential decree that established and organized the university and higher education in Benin was taken in 1970 and amended by another decree signed in 1973. The university and higher education fell under the responsibility of the Minister of Higher Education and Scientific Research (formerly Minister of National Education) while the rectors lead the University. The history of governance of the University system has been closely related to the evolution of the country's political situation. The appointment of senior management of the university (rector and vice chancellors, the general secretary, and the deans and heads of specialised institutions) was the exclusive prerogative of the government. Some improvement have been noticed and for oldest public universities, the leading staff (rector and vice-chancellors, directors and dean) are now being peer-designated through vote. But for new and emerging universities the rectors are nominated by the minister responsible for high education.

Priorities for scientific research and education in Benin

There is very limited planning for research in Benin. Most of the time, each researcher has his/her own research priority in the research centers and universities in the country. However, the five following topics can be considered as priorities for the government of Benin.

- (i) Food security and nutrition
- (ii) Life and health sciences
- (iii) Basic and engineering sciences
- (iv) Human and social sciences
- (v) Information technology and communication sciences

Very few of these priority sectors involve local knowledge in the curricula developed for students. Overall, there is a big gap between the political decisions and the development needs of the country. Moreover, the ministries and public sectors in-charge of these sectors are not complementary because they do not coordinate their activities.

Improvements in the higher education system and recent innovations

Some innovations have been proposed to improve the higher education system in Benin. As such a decennial plan of development of the education sector has been set up: creation of a committee for supervising the decennial plan, creation of a steering committee for the decennial plan and installation of a coordination committee of the decennial plan.

Indeed, only one university existed in Benin till 2000 called National University of Benin (ex-University of Dahomey). In late 2001, a new university was created and called the University of Parakou (due to increase in the number of students per year in the first one). As

such, those two public universities have been offering higher education in Benin until 2008. But from 2009 to 2014, two new public universities were created. Few months later, some reorganization were made and three more universities were created (April 2015) raising the current number of universities to seven. As such the most recent list of public universities in Benin is as follow:

- (i) University of Abomey-Calavi (created the 21 August 1970) with a Faculty of Agricultural Sciences
- (ii) University of Parakou (created the 18th September 2001 under decree N°2001-365) with a Faculty of Agronomy
- (iii) Agricultural University of Kétou (under decree 2013-140 of 20 March 2013)
- (iv) Polytechnic University of Abomey (created in May 2014)
- (v) University of Sciences, Arts and techniques of Natitingou (created the 17th April 2015 under decree N° 2015-211) with the High National School of Agronomy
- (vi) University of Lokossa (created the 17th April 2015 under decree N° 2015-211)
- (vii) University of Porto-Novo (created the 17th April 2015 under decree N° 2015-211)

Overall, the University of Abomey-Calavi remain the most populous university in Benin with high annual students' recruitment (Figure 3; for other universities, the statistics are not made available). So severe is the crisis of overcrowding that it is common to find students standing inside or outside of lecture halls or even perched on windows during lectures.

From a decennial plan of improving the higher education system in Benin, some 100 assistant professors are

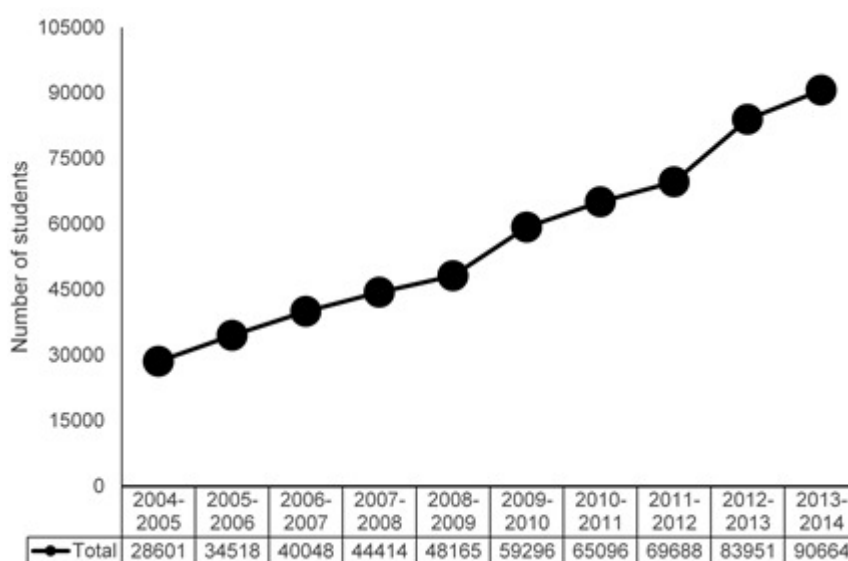


Figure 3: Fluctuation in the number of students registered at the University of Abomey-Calavi over the last ten years

recruited annually to supply the lack of Professors at national universities. This number was shared among four main universities and priority was given to faculties with plethoric students' number. Now with three newly added universities (Figure 4), the number becomes too small and is now insignificant based on the current system needs. In addition to these public universities, some private ones exist (with increasing number each year) and contribute to absorb the annual high number of scholars. However, those universities are not always of the recommended standard and the graduate are not trained as required.

Funding higher education system in Benin

The main donors for each category of education sector in Benin over the last decade are as follow:

- (i) *Primary education:* Government of Benin; USAID (U.S. Agency for International Development), UNESCO (United Nations Educational, Scientific and Cultural Organization)
- (ii) *Secondary Education:* Government of Benin, UNESCO
- (iii) *Higher and Professional Education:* funds here could be split into three categories.

Funds to universities: Government of Benin; Students registration fees; The Netherlands Fellowships Programme (through Niche and ARF projects), French Embassy, German Fund (through DAAD), European Union (through INTRA-ACP, Edulink, other research funds), Bill Gates Foundation, Government of Koweit, Government of Iran, ECOWAS (Economic Community of West African States through competitive research funds), WAEMU (West African Economic and Monetary Union through competitive research funds) and BAD (Belgian Agency for Development ex-CTB

through VLIR-UOS and CUD), CORAF-WECARD, WORLD BANK (through Excellence centres creation);

Funds for schools and faculties: Netherlands Fellowships Programme (through ARF projects), ECOWAS (Economic Community of West African States through competitive research funds), WAEMU (West African Economic and Monetary Union through competitive research funds), CORAF-WECARD, WORLD BANK (through Excellence centres creation);

Funds for individual researchers or laboratories: Small grants (BES, IFS, RUFFORD, PTES, NSF, VAVILOV), CORAF-WECARD, RUFORUM, ANAFE, Embassy (Japan, Venezuela, Iran, Côte d'Ivoire, Iran), OMS, UNICEF, PNUD, World Bank (through internships funding), etc. Although, statistics are not available on the amount and number of donors and funders of the universities, a global trend of increase is noticed in the number of donors. The vision and mission of the donors were usually divergent. While some focused on development project others provided the universities with infrastructure or fellowships/scholarships (full or partial) for training the graduate students. This gave rise to an absence of link between the various levels of the education system in the country. More recently some universities have decided also to fund the research through the competitive funds for research. The University of Abomey-Calavi is currently funding research through Master and PhD students training. At the end of the first cohort (3 years project) all the theses should be defended and an assessment of the results will be made.

Higher Agricultural Education Sector in Benin

The value of agriculture as an intrinsic part of the rural school curriculum has been acknowledged as a manual

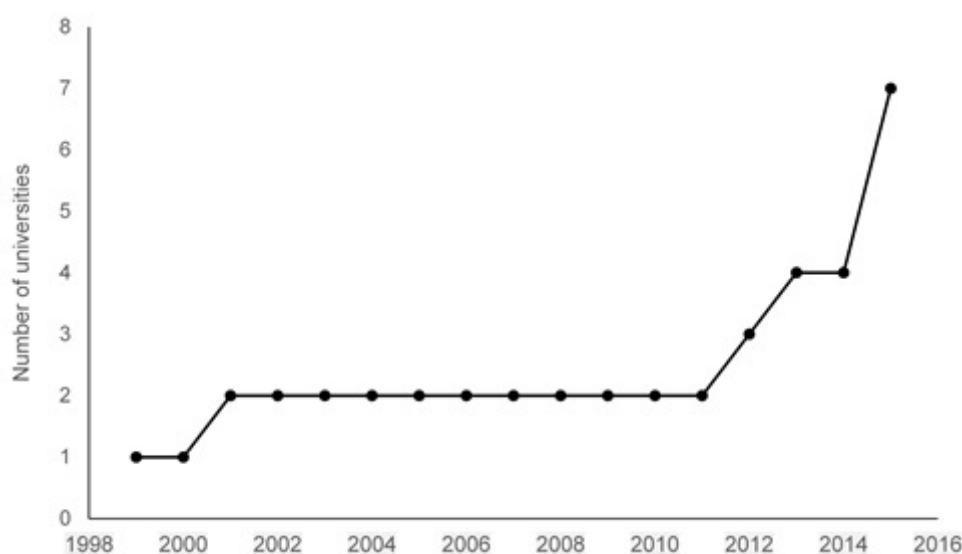


Figure 4: Trends in the creation of universities in the Republic of Benin

activity, added on to the school curriculum in Benin. Currently, Bachelor-Master-PhD system, which has been in practice in the United States since a long time and adopted and extended to most European universities, was introduced a few years ago in higher educational system in Benin. Some faculties among which the Faculty of Agricultural Sciences (University of Abomey-Calavi) have quickly adopted (due to benefits i.e. equipment, lab, resources, capacity building of lecturers and researchers for the trial) and made full use of while others were reticent. Since the academic year 2011-2012, the system has been generalized in all faculties and schools including at the faculty of Agronomy (University of Parakou), the University of Kétou, and the High National School of Agronomy of Djougou (currently under the University of Natitingou). However, some difficulties are noticed in this new system implementation (students' management, recognition of the diploma, organization of the exams, organization of field training, etc.). The number of students has been increasing for all faculties or Colleges of Agriculture in Benin (as shown for the University of Abomey-Calavi; Figure 5). Although the main tendency has been overall increasing, some decrease has been noticed during the academic year 2008-2009. The main cause being the creation of a new University of Agriculture in Ketou.

Gaps in the higher agricultural education sector

In 2003, the objectives of the higher agricultural education in Benin were defined in the Law of orientation of Education, following three large axes as follow:

- (i) to train adults equipped with spirit of initiative, having the passion for research, and being self-

employed and able to contribute effectively to the development of the country;

- (ii) to train technically qualified and balanced adults;
- (iii) to be used as means of transformation of the country.

This lawful framework governing the system presents nevertheless insufficiencies, in particular with regard to the piloting of the system, namely:

- (i) inexistence of an operational planning system based on the definition of an overall strategy of the sector;
- (ii) unsuccessful implementation of the Bachelor-Master-PhD system leading to not well trained student and as such not good candidate for a good job;
- (iii) the lack of basic laboratory supplies and equipment;
- (iv) the absence of a precise mechanism of management of flow, on the one hand, and on the other hand, by reference to the labour market;
- (v) the low adequacy between the training provided by agricultural schools and the current needs of the markets;
- (vi) the absence of a framework of dialogue between the university world and the world of the companies/industries which the industrialists constitute;
- (vii) lack of collaboration between the private and public universities.

Challenges in the Higher agricultural education and rural development

Higher Agricultural education is experiencing serious problems that impact on the quality of the education

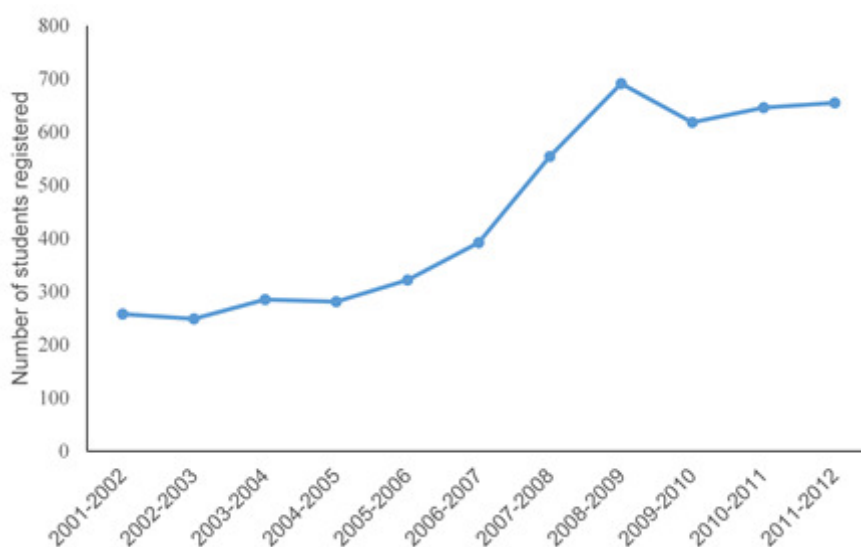


Figure 5: Trends of increase in the number of students registered at the Faculty of Agricultural Sciences of the University of Abomey-Calavi

provided and bring into question the relevance of the programs offered. Issues of concern include inadequate funding, often-increasing enrolment, insufficiency of social and teaching infrastructures, lack of teachers, poor infrastructure, the declining quality of research and teaching (in some faculties), and high graduate unemployment rates. This meant that increases in enrolments were not matched by commensurate increases in resources. In addition, faculties (or High national schools) of agriculture have to find an increasing proportion of their resources through research contracts, as national subventions are often insufficient to cover the needs. As such, the heads of these faculties (or High national schools) have to struggle for more efficient research, teaching, and management methods such as maximizing class sizes, or invest in more collaborative or regional research projects. Similarly, faculties of agriculture enlarged their mandate to cover new areas, not always related to agriculture (Forestry, Aquaculture, Fisheries, etc.). The profile of students entering agricultural programs has also changed. Students in higher agricultural education system are no longer purely rural in origin or necessarily from a farming origin. No longer is the student intake from among the best secondary school graduates. Agriculture is no longer the first choice of many of those who pursue degree courses in agriculture. The urgency of “getting a degree” often swells the ranks of Higher Agricultural Education (HAE) but the impact of HAE graduates on agriculture or rural development is not necessarily strong. These problems (Table 2) and others, are generally not being dealt with because of internal and external factors that include:

- (i) the declining power of agronomists/agricultural workers in some rural areas especially extensionists,
- (ii) the impact of low prices for agricultural products leading to low return on products sales,
- (iii) the low diversification of agricultural sector (cotton remains the main crop of interest),
- (iv) the maladjusted mechanization scheme leading to ambiguous improvement in the field
- (v) the lack of integration of science and technology in agricultural channel and development and,
- (vi) the absence of policies for higher agricultural education.

The crisis facing HAE has been identified and debated in national and international meetings but despite a plethora of exhortations and suggested solutions, change has been slow. The “new” conception of the agriculture sector is more inclusive, reflecting the use of off-farm resources in food production systems, recognizing consumer concerns for quality and food safety, and including the skills and technologies that integrate the physical farming part of the food chain with all the

post-harvest human uses and impact. HAE has a key role to play in ensuring that:

- a) critical knowledge and skills are imparted to teachers and students; and
- b) other rural development actors appreciate the role of agriculture and sustainable natural resources management, and the synergies involved in working together to build human resource capacity. Accordingly, HAE institutions have to act quickly to:
 - (i) clarify their roles and missions for a sustainable development,
 - (ii) establish their legitimate place in the higher education system, and
 - (iii) make the organizational and administrative changes necessary to make a meaningful contribution to both the professional and general stakeholders concerned with rural development. In this context, there is a critical need for HAE institutions to initiate and lead in articulating a vision for the future that serves the needs not only of agriculture but also of all who inhabit the rural areas.

Sustainable development in Benin: Necessary adjustment in the Higher education system

Traditionally, universities in Benin, including agricultural universities, have focused most of their attention on national development through the two missions of research and teaching. Universities have often seen themselves as institutions to prepare graduates for national and international labor markets, and to address research problems. Academics have had to rely on national and/or international collaboration for the quality of their research and teaching, and this has sometimes been at the expense of making a greater contribution to local economies and communities. Only a small share of the university community appears to have developed strategies to contribute to the development of community education and to support local development. Furthermore, higher education and basic education have coexisted in Benin with relatively little interaction. Despite the impact of the quality of university teaching and research on the state of the educational system of the country, there has been a tendency for universities to pay little attention to the primary and secondary levels of the school system. Yet, it is increasingly recognized that all types and levels of education other than basic education, including higher education, must contribute significantly to the pursuit of Education. Notably, the World Conference of Higher Education (1998) proclaimed that one of the missions of higher education is “to contribute to the development and improvement of education at all levels”. In the context of formulating lifelong learning

policies, and crafting more coherent, seamless, and flexible education and training systems, universities and especially agricultural institutions are likely to have an important role to play in supporting teaching and learning at all levels. Yet, the extent to which national universities already support basic education and the nature of this support are not well known. While some universities are keen to demonstrate their contribution to territorial development, and most have some links with other educational institutions in their locality, the exact roles and priorities of universities in relation to supporting rural development remains to be further specified. There must be a national policy on Higher Agricultural Education and specifically on education for rural development in general. The already existing actions dealing with HAE need to be connected with the ones on education for rural development included in the higher education system rather than with the established agricultural education. In addition, HAE institutions must be able to advise and guide policy-makers on the problems and solutions to the provision of education and training for agriculture and rural development.

Strategies to improve the higher education system in Benin

For a successful implementation of the higher education system programme at country level and their contribution to development:

- (i) it is necessary to develop the intensive use of the factor work in the technological choices of projects and programs of development;
- (ii) it is essential to reinforce more than in the past the social dialogue and set concrete action, by associating all category of actors to the process;
- (iii) one needs reallocation of the resources provided especially based on the needs and productivity.

Higher Agricultural Education institutions have to act quickly to clarify their roles and missions, establish their legitimate place in the higher education system, and make the organizational and administrative changes necessary to make a meaningful contribution to both the professional and general stakeholders concerned with rural development. In this context, there is a critical need for HAE institutions to initiate and lead in articulating a vision for the future that serves the needs not only of agriculture but also of all who inhabit the rural areas. These can be achieved through the following strategies (Table 3; supporting information):

- (i) Strategy 1: Redesign the teaching-learning process to make it more practical and hands-on;
- (ii) Strategy 2: Increase the visibility of Agricultural faculties and college;

- (iii) Strategy 3: Insure a fair availability of infrastructure needs in the national universities;
- (iv) Strategy 4: Reinforce partnerships between public and private universities.

CONCLUSION

Higher education system as it exists today in Benin is broken and fundamental reforms are urgently needed for the system to play a catalytic role transitioning the country from a subsistence economy towards a knowledge economy. Higher agricultural education, embedded in science culture, is relevant for training present and future leaders and producers for a sustainable future by providing students with relevant academic skills and best attitude. Certainly, the contribution of education to development extends far beyond the school context. Hence, the discussion on education and rural development should include various forms of non-formal education, including adult literacy programmes.

Science and Technology should be mastered in a systemic manner and used to get better perspectives for agriculture to feed Africa population but also as economy driver at all levels. The best science agenda for HAE could be effected through the integration of research institutes and their facilities to academic laboratories. That will enhance skills and scientific knowledge sharing for various end-users.

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STATEMENT OF NO CONFLICT OF INTEREST

We the authors of this paper hereby declare that there are no competing interests in this publication.

REFERENCES

- Astin, A.W. 2012. Assessment for excellence: The philosophy and practice of assessment and evaluation in higher education. Rowman & Littlefield Publishers.
- Bloom, D., Canning, D. and Chan, K. 2006. Higher education and economic development in Africa. Human Development Sector Africa Region, Harvard University, USA.
- Cochran-Smith, M. and Zeichner, K.M. (Eds.). 2010. Studying teacher education: The report of the AERA panel on research and teacher education. Routledge.
- Enders, J. 2004. Higher education, internationalisation, and the nation-state: Recent developments and

- challenges to governance theory. *Higher education* 47(3):361-382.
- L'Institut national de la statistique et de l'analyse économique (INSAE), 2015. RGPH4: Que retenir des effectifs de population en 2013? Direction des études démographiques. Ministère du Développement de l'Analyse Economique et de La Prospective. Cotonou, République du Bénin.
- Knight, P. (Ed.). 2012. Assessment for learning in higher education. Routledge.
- Montenegro, C.E. and Patrinos, H. A. 2013. Returns to schooling around the world. Background paper for the World Development Report. Washington, D.C., U.S.A.
- RUFORUM, 2015. Coming of age: RUFORUM Strategic Business Plan 2015-2020. Available from: www.ruforum.org
- Teferra, D. and Altbachl, P.G. 2004. African higher education: Challenges for the 21st century. *Higher Education* 47(1):21-50.
- Tight, M. 2012. Researching higher education. McGraw-Hill Education (UK).
- United Nations Development Programme (UNDP), 2008. Rapport National sur le Développement Humain au Bénin. UNDP, Cotonou, République du Bénin.
- World Bank Group (Ed.). 2012. World development indicators 2012. World Bank Publications, Washington, D.C., U.S.A.