



UNIVERSITY OF BENIN, BENIN CITY, NIGERIA



REGIONAL STRATEGY: 2023 -2028

SHORT TITLE: UNIVERSITY OF BENIN REGIONAL STRATEGY

Address for Correspondence

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1. Background information about the University of Benin

The University of Benin in Nigeria is presently one of the most prestigious universities in Nigeria. It is one of Nigeria's six first generation publicly funded universities. Established as an Institute of Technology in 1970, and registered as a full-fledged university by the National Universities Commission (NUC) in 1971, it is now ranked as one of the country's foremost and most preferred universities. Within a few years of its existence, and due to the quest for human resources to address national development in the country, the University expanded its education, training and research offerings to include the Art and humanity courses. The University presently has fifteen faculties: Agriculture, Arts, Basic Medical Sciences, Education, Social Sciences, Engineering, Law, Environmental Sciences, Life Sciences, Dentistry, Management Sciences, Medicine, Physical Sciences, Pharmacy, and Veterinary Medicine. The faculties offer over 110 postgraduate and undergraduate courses in diverse disciplines. The University of Benin hosts the Africa Centre of Excellence in Reproductive Health Innovation (CERHI) and participates actively in the World Bank – African Economic Research Consortium (AERC).

With a student population of over forty-five thousand and a staff strength of eight thousand personnel, the University of Benin has provided exemplary leadership in the educational development of the immediate region and Nigeria in general. To date, the University has about 350,000 alumni dotted in all parts of the world.

Fifty-one years after its inception, it has become imperative for the University to broaden its horizon by developing a regional strategy to expand its developmental influence throughout the African region.

In 2006, the University of Benin was ranked as the second best in the Commonwealth on account of its developmental impact on its immediate environment. Given the global best practice for institutions to positively impact their host communities, extending the impact to African regional frontiers will be highly transformational. It is against this backdrop that a regional strategy for the University of Benin has become highly imperative.

2. Composition of Committee appointed by the Vice-Chancellor and work schedule

The Vice-Chancellor of the University of Benin, Professor Lilian Salami established the University Impact Committee (UIC) in June 2021 to coordinate the development of the University's Regional Strategy and also carry out other assignments relating to implementing the DLI 7.1-7.6 of the World Bank ACE project in the University. The Vice-Chancellor decided to establish this broader committee rather than a specific committee on regional strategy in order to synchronize with the overall goal of the project to achieve impact and effectiveness for the University. It was necessary that the committee understood the nature of this aspect of their work rather than to focus on the narrow aspect of developing a regional strategy. Additionally, it was evident that all sub-sections of DLI 7 are related to each other – and she considered that it was most appropriate for a single committee to work on implementing the required outcomes in a holistic manner.

The composition of the Committee is as listed in the chart below:

This list included co-opted members as well as those who could not physically attend meetings because of their location outside the country. But they were contacted from time to time and they submitted recommendations to the committee. We adopted this approach because of our desire to obtain perspectives



from different segments of the University as well as to learn from other universities/countries that have experiences with developing regional strategies.

S/N	NAME	QUALIFICATION/ DESIGNATION	POSITION
1	PROFESSOR (MRS.) ADESUWA ITOHAN OSAHON	Professor of Public Health Ophthalmology and Deputy Vice Chancellor, Administration, University of Benin	Chairman
2	PROFESSOR FRIDAY OKONOFUA	Professor of Obstetrics and Gynaecology and Reproductive Health; Centre Leader, African Centre of Excellence in Reproductive Health Innovation (CERHI); Director, Grants and Research Management	Member
3	PROFESSOR OFUAN JAMES ILABOYA	Professor of Accounting and Taxation; Director, University of Benin Consultancy Services	Member
4	PROFESSOR (MRS.) KOKUNRE EGHAFONA	Professor of Cultural Anthropology; Acting Dean, Faculty of Social Sciences, University of Benin	Member
5	PROFESSOR NOGHAYIN JERRY ORHUE	Professor of Medical Biochemistry; Dean, Faculty of Life Sciences, University of Benin	Member
6	DR STEPHEN OBEKI OBEKI	Director of Alumni Relations, University of Benin	Member
7	PROFESSOR JOSEPH BALOGUN	Professor of Physiotherapy, College of Health Sciences, Chicago State University, USA	Member
8	PROFESSOR ANNE BABER WALLIS	Professor of Public Health, University of Louisville, Kentucky, USA	Member
9	PROFESSOR ADAMSON SINJANI MUULA	Professor of Public Health and Epidemiology; Centre Director, African Centre of Excellence in Public Health and Herbal Medicine (ACEPHEM), University of Malawi	Member
10	DR. ERIC ARTHUR	Senior Lecturer, Department of Economics, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana	Member
11.	MS. VIVIAN ONOH	Program Manager, African Centre of Excellence in Reproductive Health Innovation (CERHI) and Centre of Excellence in Sustainable Procurement, Environmental and Social Standards Enhancement (SPESSE)	Member
12	PROFESSOR IFUERO OSAD OSAMWONYI	Professor of Finance, and Director, Academic Planning, University of Benin	Member
13	DR BENEDICTA EHANIRE	Public Relations Officer, University of Benin	Member
14	PROF EKI OGHRE	Professor of Optometry, and Chairman University Admission Board, University of Benin	Member
15	PROFESSOR CLEMENT IGHODARO	Dean of Students, University of Benin	Member



16	PROFESSOR NGOZI UNUIGBE	Professor of Law, and Director of Quality Assurance, University of Benin	Member
18	PROFESSOR ANTHONY WAKA UDEZI	Professor of Clinical Pharmacy and Director, ICT, University of Benin	Member
19	MRS. ITOHAN IGIEVA	Assistant Registrar, University of Benin	Secretary

2.1 Committee work schedule

The terms of reference (TOR) of the Committee are as follows:

- 1) To recommend ways to develop and implement a regional strategy for the University.
- 2) To provide evidence that the University uses an open and competitive process for selection of its senior leadership positions.
- 3) To apply and obtain international accreditation for the University as an institution.
- 4) To ensure that the University of Benin participates in PASET regional benchmarking initiatives.
- 5) To identify and develop strategies for the achievement of institutional impact milestones, including 1) the establishment of grants and research administration office; 2) a review of the strategic plan of the University; and 3) the establishment of a viable and active career office in the University.
- 6) To submit a report containing recommendations on 1-5 above within a reasonable period of time to guide the University management as appropriate.

Based on the above TORs, the Committee developed a schedule of work for developing the regional strategy as follows:

- 1) The Committee started meeting on 22nd June 2021 to discuss ideas and steps for mobilizing the University to develop the strategy. It shared information on the critical importance of the Strategy for the University, especially as it relates to the mission and vision of the University. The heads of faculties, departments, and units of the University were contacted and informed about the Strategy and the need for multi-stakeholder engagement and participation to develop and finalize the Strategy. Some minutes of the meetings held by the Committee are attached herewith to explain the process.
- 2) The Committee developed and shared copies of questionnaires with staff and students that solicited information on their ideas about the regional strategy. Specifically, questions were asked about the need for the Strategy, the strategic advantage of the University in critical areas of training and research that will be the ideal focus of the strategy, existing regional engagements of staff and students with other regional institutions, the names of countries and universities that are suitable for regional engagement, and the challenges that need to be overcome in developing and implementing the strategy
- 3) The Committee analyzed the results of the University-wide questionnaire and identified critical elements that would form the basis of the regional strategy
- 4) In July 2022, the Committee organized a workshop that brought together the principal officers, deans and directors to discuss the initial results of the environmental scan from the questionnaire survey, to improve on the SWOT analysis (strengths weaknesses, opportunities, and threats) of the University in fielding the regional strategy, and to build a consensus on finalizing its key components and expected outcomes. The workshop was attended by all principal officers of the University, and was chaired by the Vice-Chancellor.

- 5) Subsequently, a draft Regional Strategy was prepared and discussed by the Committee and forwarded to the Vice-Chancellor for her review and final inputs.
- 6) The Vice-Chancellor discussed the draft Strategy with members of her management team, and thereafter forwarded it to the University Senate for final approval.
- 7) Senate finally gave consent after detailed discussion and revision of all sections of the Regional Strategy to be used by all sections of the University.
- 8) A sub-committee consisting of 3 members of the Impact Committee was set up to draft the regional strategy after initial discussion by the committee. The sub-committee later submitted a report to the main committee which was extensively discussed and modified.

3. Results of Environmental Scan

The outcome of the environmental scan conducted as a result of the development of the regional Strategy in the University include the following:

Quality of teaching and students' learning experience

Most of the teachers (71%) who responded were of the opinion that they have above-average of materials/facilities required for meaningful teaching and learning. They also agreed that the quality of students in their classroom is such that would compare well with their peers elsewhere. The survey however seems to suggest that over half of them appear to be tilted more towards the teacher-centred learning approach as opposed to the student-centred learning method. This position was also corroborated by the outcome of the student survey.

Both the teachers and students agree that although the University of Benin scores higher than many such institutions in the country, the pursuit of global best practices would require significant upgrades in several respects.

Areas that would require particular attention were listed to include:

- Improvement in Internet connectivity on campus.
- Provision of more cutting-edge research equipment.
- Need to encourage many more staff to gravitate more towards the student-centred learning approach.

Staff development programs

A very high fraction (93%) scored the University very high in this regard. All the respondents are aware of the University Policy on staff training and almost all (98%) have benefitted directly from such opportunities. While some have benefitted from overseas training, others have benefitted from training within the University of Benin or in institutions of no less prestige within the country. A few have had the privilege of enjoying this opportunity for sponsored training more than once. The training under consideration includes fully or partially funded postgraduate programmes (including PhDs), paid conferences, seminars, and workshops (both local and international).

Exchange and linkages

The ratings for both staff and student exchange and linkages were rather low. The majority of the students have no knowledge of any student exchange programme. Of the few who were aware lamented why such exchanges were mostly one way in favour of foreign students coming here.

Conversely, while a few staff have benefitted from visits to external laboratories, not much is seen of reverse traffic. There is therefore a need to re-engineer all aspects of the exchange programme.

Research collaboration

The survey provided massive evidence for meaningful research collaborations. However, most of these collaborations are either local or national. Major international collaborations were largely limited to some of the specialised centres in the University. These centres include the Centre of Excellence in Reproductive Health Innovation (CERHI), and the African Economic Research Consortium (AERC).

Students recruitment process

All the students who responded agreed that their selection followed a very rigorous 2 tier selection process. They were all also in agreement that the selection process was very transparent and that only candidates who passed the qualifying exams were admitted.

The majority of the students (83%) rated the University of Benin as better than most universities in Nigeria and are proud to be here.

35% noted they chose UNIBEN for prestige, 45% because of affordability and 20% for the reason of proximity to home.

However, almost all the respondents stated that there was an extremely low population of foreign students or staff at the University.

Staff recruitment

All respondents in this category agreed that they went through a rigorous interview process to get the job. Job satisfaction appears relatively high as 87% of the staff said they would prefer to remain at the University of Benin in comparison to other Universities in Nigeria. However, only about 10% agreed they would not leave the University if they got an offer from a foreign institution.

Employers' perceptions

Based on the performance of our graduates who have attended interviews and some having secured a job with them, most of the employers surveyed agreed that products from the University of Benin rank very high among graduates from Nigerian universities. 39% of employers agreed that there are some gaps in training received by the students and the needs of the industry. They, however, admitted that the ease with which the employees adapted to the workplace was phenomenal.

Oversubscribed and undersubscribed programmes

The seven most subscribed programmes are Medicine, Nursing, Accounting, Law, Optometry, Electrical & Electronics Engineering and Economics and tend to suggest that these are the programmes that must be strengthened. Programme subscriptions are usually a function of the demand for such courses in the labour market.

The five most undersubscribed programmes are History, Geography and Regional Planning, Adult and Non-formal Education, Mathematics, Crop Science, Fine Arts, and Foreign Languages. The implication is clearly that the University should look in the direction of re-engineering these courses.

Prospective programmes



On the basis of the survey of the national and global economy and dynamics in the labour market, it would add to the competitive advantage of the University if programmes such as Software Engineering, Cyber Security, Development Economics, Financial Economics, Biotechnology, and Financial Technology are introduced.

Regional engagement (Centre of Excellence in Drug Research and Development)

- It was decided to use this approach in order to situate the environmental scan within the larger experiences of the University. It was from those broader experiences that the regional strategy was expected to emerge and its justification consolidated, hence, the stakeholders workshop was organized.
- The University of Benin considers drug Discovery as one area she could significantly make an impact on the African continent and beyond.
- The University has a fully-fledged Faculty of Pharmacy, a College of Medical Sciences as well as Faculties of Life Sciences and that of Physical Sciences, with potential for synergy in the area of drug research and development.
- There is need to coordinate all research efforts in this direction and assemble same with a view to making the University of Benin a major hub or Centre of Excellence in Drug Research and Discovery.
- There is need for the University to develop mutually beneficial collaborations with reputable Universities and research institutes within the African continent and beyond.

4. Details of Stakeholder Consultations held

4.1 Instrument/Methodology

Stakeholder consultations were conducted using a combination of questionnaire-based surveys and multiple stakeholders' workshop.

Questionnaire-based Survey

In achieving this, we carried out a survey of some critical elements of both our internal and external environments by way of an environmental scan. On the whole, we administered a total of one thousand three hundred and fifty questionnaires (1,350) and one thousand two hundred and ninety-five (1,295) were retrieved and analysed, representing a response rate of ninety-six per (96%) spread across internal (777) and external (518) communities. The internal community was represented by students/alumni (428) and staff of the University of Benin (349). By contrast, the external Community comprised prospective students (208), parents (155), and employers of labour (155).

In the sections below, are summed up the different elements we sought to probe and establish in our survey of the various critical stakeholders in the respective communities.

External Community

Here we sought to ascertain how the general population as exemplified by prospective students, parents and employers of labour perceive the University of Benin. The intent was to attempt to see ourselves through the eyes of our external Community.

In doing this, we sampled different population subsets within our external Community.



Stakeholders considered and surveyed were:

External Community – prospective students, parents, industry/employers of labour.

The information elicited from the various groups included the following:

Prospective Students - desire to pursue a university education; desire to choose or not choose the University of Benin as first choice institution; and reason(s) why they will or will not consider the University of Benin.

Parents of Prospective Students – 1) To what extent are they willing to encourage their children/wards to pursue university education? 2) What they would prefer between sending their children/ward to schools overseas and schooling in Nigeria if funding was not a problem? 3) Which would they prefer between a public and private university? 4) What factors would influence their preference for a university for their children/wards?, 5) Compared to other universities, how high would they rate the University of Benin? 6) what additional role would they want the University of Benin to perform both nationally and regionally?

Employers of Labour: 1) Ease with which they would hire a graduate of the University of Benin; 2) Ease with which graduates of the University of Benin fit into their roles or adapt to new roles; 3) Observed gaps between training received by graduates of the University of Benin and industry expectations; and 4) strengths and competencies exhibited by graduates of the University of Benin in their workplace and how such competencies can be scaled for national and regional development

Internal Community

Staff – 1) their general perception of the University ahead of being employed here; 2) Competitiveness and transparency of the University's hiring process; 3) Overall job satisfaction; 4) State of the working environment including facilities and interpersonal relations; 5) Opinions on the adequacy of the University policy on staff development; 6) Availability and effectiveness of staff development opportunities; 7) Quality of students, both nationally and regionally, in classrooms; 8) Ability of the University to attract staff and students from other countries; and 9) preferences on courses and strategies for regional development engagement.

Students/Alumni - 1) Motivation for seeking University education; 2) Motivation for choosing the University of Benin; 3) Opinion on why they think some prospective students may not select the University of Benin; 4) General assessment of learning experiences at the University of Benin; 5) Effectiveness or otherwise of the University's Students Support Systems; 6) Ability of the University to attract foreign students; and 7) strategic advantages of the University of Benin in engaging regional universities

4.2 Stakeholders Workshop

The specific objective of the academic stakeholders' workshop was to identify a niche and comparative advantage of the University in solving regional challenges, to review the results of the environmental scan, and gain consensus on ways to develop and implement a regional strategy for the University.

Attendance at the workshop. The Deputy Vice-Chancellor of the University (Ekenwan campus) chaired the workshop on behalf of the Vice-Chancellor. Other participants included the Deputy Vice Chancellor (Administration), the Deputy Vice Chancellor (Academics); Centre Leader and Staff of the Centre of Excellence in Reproductive Health Innovation (CERHI), Deans and Directors; Members of the University Impact Committee, and principal researchers in the University. Photos of the workshop and participants are shown in Figs 1 and 2.

Figure 1:

Photo of the venue and participants actively discussing during the workshop.



Figure 2:
Photo of some participants at the completion of the workshop



Key outcomes of the workshop

- Africa's disease burden remains extremely high and alarming.
- The implications of this high disease burden on the economy and overall wellbeing of Africans and African nations is extremely worrisome.
- Most pharmaceuticals used in the continent are imported from more developed nations.
- The high cost of these pharmaceuticals further complicates the economic implications of the high disease burden.
- Nigeria and the continent in general is well endowed with medicinal plants and other natural products with pharmaceutical potentials.
- Considering the University's strength in Biomedical Research, the long history of traditional medicine and the abundance of medicinal plants indigenous to Nigeria, the University of Benin is well positioned to be a major player in drug research and discovery in the African region.

The workshop mapped out the countries and universities in Africa that would be engaged in the regional strategy on drug discovery and research, and developed a reasonable milestone for implementation of the strategy when finalized and approved by the University.

4.3 Other Sources of Information

Apart from the questionnaire-based survey, other sources of data included:

1) *Specialised lecture series* specifically targeted at gaining insights into how the University has fared in certain areas of the larger society. One of such was the lecture delivered on Bridging the Gap between the Academia and the industry- An Alumnus perspective delivered by Dr . Doyle Edeni, an Alumnus of the University, who himself is now an industrialist and an employer of Labour.

2) Similarly, colleagues who return from training academic sabbaticals are often given the chance to share their experiences formally and provide insights on the extent to which their training here was useful in enabling them to seamlessly adapt into the respective host institutions they visited. They are also expected to tell how our standard operating procedures and the state of facilities compare with those elsewhere.

3) *Randomised unstructured personal communications*

We also embarked on personal interviews as part of efforts at gaining insights into the perception of both the internal and external communities on certain aspects of the University's operations.

4) *Analysis of in-house data*

We analysed in-house data derived from available University records. This was to provide additional empirical data on staff and student demographics including how widespread and diverse our staff and student populations are.

5) *Audit of common knowledge in public domain of UNIBEN's strategic relevance to national and regional development*

We also audited common knowledge in public domain about the University of Benin in relation to the national and global economy. The related questions were: "how does the public understand the strategic advantage of the university of Benin in contributing to national and regional development? And what areas of competencies do employers and the general public see the University of Benin graduates as having an edge over graduates from other Universities? This was to enable us assess the relevance of our programmes in relation to national and global development. This was necessary to enable us see where we stand and to identify programmes that we need to emphasize or de-emphasize and new ones that we probably need to bring on board.

5. Results of SWOT Analysis

This SWOT analysis was generated after the workshop organized by the University Impact Committee. Participants in the workshop were academic and administrative heads in the faculties and Departments, faculty members, representatives of the student body, and other concerned stakeholders. The workshop was held on Friday 29th July 2022. It involved some hours of brainstorming and analysis. The SWOT analysis below was a collaborative and inclusive process. Participants pooled their individual and shared knowledge and experience for truthful, comprehensive, insightful, and useful analysis.



5.1 Strengths

1. The University of Benin was initially established in 1970 as the Midwest Institute of Technology (MIT) and has a firm foundation as an institute for research and innovation in the STEM (Science, Technology, Engineering and Mathematics) disciplines.
2. The University hosts several departments and disciplines relating to drug research and drug discovery. These are: Pharmacy and its sub-specialties, including pharmacognosy, pharmaceuticals, and pharmacology, Science disciplines (biology, botany, biochemistry, chemistry, etc.), Medical Sciences, agricultural sciences, and engineering/environmental sciences.
3. The strategic plan of the University of Benin includes a provision made for tackling the major challenges of development using scientific and innovative methods. We consider that the inadequate research into indigenous medicines is a major challenge that needs to be addressed
4. Within its immediate environment, Edo State and Benin City where the University is located has one of the largest concentrations of medicinal plants and fauna in sub-Africa, with a huge presence of traditional medical practitioners that are familiar with the plants and are using them at the formative level to treat diverse diseases.
5. The University has experience in research capacity for collaborative proposal writing as exemplified in the number of award-winning collaborative research proposals given annually by the Tertiary Education Fund (TETFund) Nigeria.
6. The University has over 99 programmes from 15 Faculties, Institutes, and Centres, and engages actively in a multidisciplinary research approach.
7. There are available human resources of staff as the University of Benin has an academic staff strength of about 3000 well-experienced, innovative, and purpose-driven staff most sought-after by universities in sub-Saharan Africa.
8. Majority of the professors and several other academic staff at the University of Benin belong to regional and international associations in their areas of specializations.
9. The University of Benin has strength and a proven track record in scientific research and discovery.
10. There are National Agencies (government agencies) available in Nigeria as regulatory and monitoring bodies to oversee the quality and standard of research output.
11. The University is a member of IAESTE (International Association for Exchange of Students for Technical Experience). IAESTE offers high-quality practical training exchange program between members to enhance technical and professional development. IAESTE also promotes international understanding and goodwill amongst students, academic institutions, employers, and the wider community.

12. The University of Benin hosts the Africa Centre of Excellence in Reproductive Health Innovations (CERHI), and participates actively in the World Bank – African Economic Research Consortium (AERC).

5.2 Weaknesses

1. There is insufficient collaboration across disciplines, which should be explored and encouraged in a much greater capacity than at present.
2. There is a lack of some up-to-date /state-of-the-art equipment in some of the science disciplines related to drug discovery
3. Annual budgets make minimal provisions for research and innovation

5.3 Opportunities

1. In 2019, World Health Organisation (WHO) threw the challenge to the global community to build knowledge bases for the management of traditional herbal medicine in its Traditional Medicine Strategy (WHA62.13) 2014–2023.
2. The use of herbal medicines and phytonutrients or nutraceuticals is expanding rapidly worldwide. There is also a rising health consciousness in natural remedies and the use of herbal medicinal products and supplements
3. There is an available target population as many people worldwide rely on herbal medicine for some part of primary healthcare.
4. There are several readily available indigenous /traditional methods of herbal preparation known to researchers.
5. The university is a member of an international body African Biogenic with a mandate to identify and sequence 100,000 African Native Plants species.
6. There is an opportunity for collaborative research with other institutions in the sub-region and region.

5.4 Threats

1. There may be a lack of awareness and capacity to protect intellectual property within the region.
2. The poor law enforcement of patents/intellectual property is of great concern,
3. The unwillingness of traditional herbal practitioners to divulge their trade secrets and collaborate with academics.

6.0 Regional Vision of institution: 5-10 years

The University of Benin has a pivotal role to play in the development of the African subregion. To accomplish this role, the University of Benin Regional Strategy is anchored on a substructure that illuminates the role of the University of Benin in the development of the African subregion. The regional strategy for the University of Benin would be achieved by expanding the University's international visibility. The result of applied research to address industry and society-specific issues both at the national and international frontier will undoubtedly help position the University to achieve the desired leadership role in developing the African subregion. The pleasant nature of the relationship between educational institutions and regional development strategies presupposes that the product of the University would benefit from the regional strategy through exposure and international competitiveness, more integrative approach to teaching through the regional strategy

will help in the area of formidable human capital development and skill acquisition to meet the demands of the Nigerian economy and the African region in general.

The vision of the University of Benin is “to establish a model institution of higher learning which ranks among the best in the world and responsive to the creative and innovative abilities of the Nigerian people”.

The mission of the University is “to develop the human mind to be creative, innovative, competent in areas of specialisation, knowledgeable in entrepreneurship and Dedicated Service”.

Within this university’s vision and mission statements, we have conceptualized the mission and vision statements of the University’s regional policy over the next 10 years as shown below:

6.1 Vision of the regional strategy of the University

To be a leading regional and global institution and hub conducting collaborative training and research in the field of drug discovery using Africa’s huge reservoir of herbal plants and botanicals.

6.2 Mission of the regional strategy

To work with national, regional, and international stakeholders in synthesising knowledge through high quality research and training for addressing the deficit of affordable and effective drugs for the treatment of existing and emerging diseases in the African sub-region.

7.0 Regional objectives:

7.1 Strategic Objectives

The specific objectives of the regional strategy are as follows:

1. To build a multi-disciplinary consortium of researchers and innovators in regional Universities and institutions to focus on identifying appropriate medicinal plants, developing an international botanical garden of herbal/medicine plants, and conducting primary research aimed at assessing the usefulness of traditional plants in the treatment of common ailments and illnesses in the African region.
2. The African Research Consortium on Medicinal Plants to Drug Discovery (African Drugs Arise Project, ADAP) will use the results of multidisciplinary qualitative and experimental research that show effectiveness at the formative research level to conduct higher level secondary research that identify the chemicals and elements responsible for proven effectiveness, to characterize their chemical components, and to conduct further research that prove their in vitro effectiveness in animal models of disease causation.
3. ADAP will conduct further experiments to provide evidence for drug effectiveness in humans, including characterization of mechanisms of action, and the identification of potential side-effects.
4. ADAP will build capacity in the African region and share/exchange resources for conducting multi-disciplinary high level research for drug discovery including pharmacognosy, agricultural cultivation/identification of medicinal plants, the science and social ecology of herbal medicines working with African herbal medicines practitioners, bioinformatics, cheminformatics, metabolomics, clinical trials, biomedical informatics, pharmacogenetics, and high-content screening.



5. ADAP Universities will develop new curricular for undergraduate and postgraduate programs related to drug discovery, and co-develop curricular with industry and government partners to include critical elements that promote the innovative integration of drug research and development into Africa's health care system with potential to scale up the various components throughout the African continent, and to move drug discovery from research into industry, commerce and policy.
6. To develop a strategy for attracting the best students and academic staff on drug research and development to the University of Benin from within Nigeria, Africa and beyond, and strengthen the university exchange programmes, partnerships, and linkages to improve the visibility of the University in the global space.

7.2 Identified and Prioritized regional activities

Identified activities

To achieve the aforementioned specific objectives, ADAP will implement the following activities.

- 1) Develop and sign Memoranda of Understanding (MOU) between the Vice-Chancellor of the University of Benin with Vice-Chancellors/Presidents of selected Universities in Nigeria and other African countries that have existing strong research and training programs in herbal medicine, medicinal plants, medicinal botanicals, pharmacognosy, huge and Departments with the Universities will be identified within the participating countries to coordinate the initiative. However, given the multidisciplinary and multi-nodal strategy being developed for the effective delivery of the project, ADAP will be centrally administered by each University to ensure the maximal participation of the most qualified staff and students.
- 2) At the University of Benin, a central ADAP committee consisting of representatives of departments that are relevant to herbal medicines and drug discovery will be established by the Vice-Chancellor. The committee will be chaired by a high-ranking professor in the specialty who would be assisted by a program manager that will manage the project on a day to day basis. The Chair of the ADAP committee will report through the Vice-Chancellor to Senate. An office space with all the management supportive and ICT infrastructures will be established for the Committee. The Committee will liaise with other ADAP management committees in the participating Universities.
- 3) Following the signing of the MOUs, an ADAP coordinating committee will be developed, whose chair will be held by the University of Benin, but with memberships from all participating countries and institutions. The ADAP coordinating committee will coordinate the activities related to the consortium and will hold regular monthly meetings (initially monthly) to develop the methods and processes for implementing all project activities
- 4) Bimonthly webinars to share information on drug discovery research going on in the participating universities. This would consist of completed and published research findings as well as on-going research and proposed research.
- 5) Fund raising and resource mobilization for building capacity for drug research and program/course establishment and review in the participating universities. This would include development of fundable research concept papers and full proposals, as well as responses to international calls for proposals in various fields of drug research and discovery. Our aim would be to obtain huge and long term research grant from a major donor or create a basket funds from multiple donors. We will also ensure that each



University devotes a proportion of their annual budget to drug discovery research, and also seek funding from various government sectors including Ministries of Health, Education and TETFUND (in the case of Nigeria) and from Pharmaceutical industries and related private sector practitioners.

- 6) Development and co-development of new courses in drug discovery in collaboration with pharmaceutical companies, herbal medicines practitioners, clinical providers, and government agencies to ensure high impact identification of disease focus and appropriate medicinal plants
- 7) Exchange of laboratory experiences, competencies between participating countries and universities, and sharing of use of expensive equipment between participating institutions. In this regard, students and staff from participating Universities would exchange laboratory visits so as to work on samples of herbal medicines, and share experiences, and help each other in potentiating their research knowledge and experiences in the field of medicinal plants.
- 8) Co-hosting, co-supervision, and co-award of Master, PhD and postdocs in various fields of medicinal plant research and drug discovery

7.3 Participating Universities and countries

Table of participating Countries and Universities in ADAP

Participating Universities	Country	Area of Expertise	Role	Comments
University of Benin (UNIBEN)	Nigeria	Medicinal plants inventory, qualitative and quantitative initial research, basic science research – biochemistry, physiology, biology, agriculture, etc., pharmacological and pharmaceutical sciences, clinical trials, and a Centre on drug research and discovery	Team coordinator and lead institution	University has existing links with herbal medicine practitioners and currently repackages commonly used drugs
Obafemi Awolowo University, Ile-Ife (OAU)	Nigeria	Has had a Drug Research and Production Unit (DRPU) for over 30 years	Team member	The university has diverse academic staff with interest in research into

				herbal medicines, and has pioneered research into traditional medicines for the treatment of sickle cell disease. Has a high-performance central science laboratory
University of Medical Sciences, Ondo State (UNIMED)	Nigeria	A purely medical university with interest and existing program/curriculum in traditional (herbal medicines)	Team member	Its existing curriculum in herbal medicine would be useful to the consortium. Also
Kwame Nkrumah University of Science and Technology, Ghana	Ghana	The Vice-Chancellor is a pharmacognosy and the University is very active in herbal medicines research	Team member	The University has existing programmes in drug research and discovery with focus on herbal medicines
University of Kwazulu-Natal, South Africa	South Africa	The University has active programs in medicinal chemistry, computational pharmacology, spectrometry, and drug discovery	Team member	The University is strong in herbal medicines research methodologies
University of Ghana	Ghana	Has an active Department of Pharmacognosy and herbal medicine	Team member	The University is active in training and research in herbal medicine.

IMPLEMENTATION PLAN FOR THE UNIVERSITY OF BENIN'S REGIONAL STRATEGY

		TIMELINES												OUTPUT						
		YEAR 1			YEAR 2			YEAR 3			YEAR 4				YEAR 5					
S/N	ACTIVITY	JUSTIFICATION	PERSON(S) RESPONSIBLE	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
1	4 workshops to disseminate the regional strategy document to different categories of UNIBEN faculty and students	Cost of refreshments during the workshop	IMPACT Committee																	Faculty and students of UNIBEN aware of the regional strategy
2	Develop and sign Memoranda of Understanding (MOU) between the Vice-Chancellor of the University of Benin with Vice-Chancellors/Presidents of selected Universities in Nigeria and	Travel charges for the Vice-Chancellors and courier services	Chairman, IMPACT Committee																	MoUs signed by participating universities



					Minutes of meetings showing activities carried out during the month	Webinars conducted
other African countries						
3	Monthly meetings of the African Drugs Arise Project (ADAP) coordinating committee (online monthly and physical once a year)	Cost of organizing annual physical meeting of member universities	ADAP Chairman	ADAP Chairman		
4	Bimonthly webinars to share information on drug discovery research going on in the participating universities.	Cost of publicity	ADAP Chairman			



5	Fund raising and resource mobilization for building capacity for drug research and program/course establishment and review in the participating universities	Cost of conducting 3 resource mobilization workshops for participants from participating universities at least 3 times in 5 years ADAP Chairman	Workshops conducted. Proposals and concept notes developed and submitted to funding agencies
6	Development and co-development of new courses in drug discovery in collaboration with pharmaceutical companies, herbal medicines practitioners, clinical providers, and government agencies	Cost of conducting physical meetings to finalize and revise curricula once in two years ADAP Chairman	Curricula developed and mainstreamed into regular programs



7	Exchange of laboratory experiences, competencies between participating countries and universities, and sharing of use of expensive equipment between participating institutions	Cost of maintaining equipment and travels for researches	ADAP Chairman
8	Co-hosting, co-supervision, and co-award of Master, PhD and postdocs in various fields of medicinal plant research and drug discovery	Travel allowance for faculty to participating universities	ADAP Chairman
9	Support joint publications in Scopus-indexed journals	Cost of article publications	ADAP Chairman

Journals published





9.0 BUDGET FOR THE UNIVERSITY OF BENIN'S REGIONAL STRATEGY

S/N	ACTIVITY	JUSTIFICATION	PERSON(S) RESPONSIBLE	BUDGET (\$)
1	4 workshops to disseminate the regional strategy document to different categories of UNIBEN faculty and students	Cost of refreshments during the 4 workshops	IMPACT Committee	5,000
2	Develop and sign Memoranda of Understanding (MOU) between the Vice-Chancellor of the University of Benin with Vice-Chancellors/Presidents of selected Universities in Nigeria and other African countries	Travel charges for the Vice Chancellors and courier services	Chairman, IMPACT Committee	10,000
3	Monthly meetings of the African Drugs Arise Project (ADAP) coordinating committee (online monthly and physical once a year)	Cost of organizing annual physical meeting of member universities	ADAP Chairman	15,000
4	Bimonthly webinars to share information on drug discovery research going on in the participating universities.	Cost of publicity	ADAP Chairman	2,000
5	Fund raising and resource mobilization for building capacity for drug research and program/course establishment and review in the participating universities	Cost of conducting 3 resource mobilization workshops for participants from participating universities at least 3 times in 5 years	ADAP Chairman	30,000
6	Development and co-development of new courses in drug discovery in collaboration with pharmaceutical companies, herbal medicines practitioners, clinical providers, and government agencies	Cost of conducting physical meetings to finalize and revise curricula once in two years	ADAP Chairman	20,000



7	Exchange of laboratory experiences, competencies between participating countries and universities, and sharing of use of expensive equipment between participating institutions	Cost of maintaining equipment and travels for researchers	ADAP Chairman	50,000
8	Co-hosting, co-supervision, and co-award of Master, PhD and postdocs in various fields of medicinal plant research and drug discovery	Travel allowance for faculty to participating universities	ADAP Chairman	50,000
9	Support joint publications in Scopus-indexed journals	Cost of article publications	ADAP Chairman	50,000
		TOTAL		232,000

10. Source of resources – financial, human, physical

Financial – Financial resources for ADAP will be sourced from multiple channels including the following:

- University Budget – from the University of Benin and other collaborating Universities. We will engender high-level involvement of the leaderships of the University of Benin and those of participating institutions. As part of their commitment to the project, they will be encouraged to budget annual research funds of their universities to the project.
- Funds from Annual work plans of CERHI and other World Bank ACE projects. Some universities being invited to host the project already have funds for networking and regional research activities. These include ACE Centers from Nigeria, Ghana, Malawi and the Cameroon. Such centers will be encouraged to allocate part of their annual research funds to implementing the project activities.
- Funds from Pharmaceutical Companies – Indigenous pharmaceutical companies will be interested in the project. Apart from enlisting them to be part of the project consortium, we will also make specific requests to them to fund aspects of the research and project activities.
- Grants. We will seek research funds from diverse sources including the National Research Fund of TETFUND in the case of Nigeria, and similar research funding bodies in the other participating countries. Additionally, the ADAP Consortium will develop collaborative research proposals to obtain bigger research funding.
- Other resources – These include sharing of laboratory equipment library information, the development of learning/e-laboratory for distance learning and research, exchange of key staff and students, placement of post-docs as well as researchers and laboratory personnel.
- Physical resources – the University of Benin Management team has committed itself to allocate a building within the research area of the University to manage the consortium and the regional strategy on a sustainable basis with direct reporting channel to the Vice-Chancellor.



11. Conclusion

The University has identified the need to create a niche in developing a regional approach to tackling the current deficit in scientific knowledge for indigenous drug discovery and use in the African continent. Through ADAP, the University will build an active and highly functional team that will leverage human and material resources from high performing higher institutions and relevant stakeholders in the continent to develop a culture and relevant competencies for developing new drugs from indigenous plants and medicines. We believe that this approach holds high promise for some of the most daunting health and social challenges in Africa.