

Revised Research Strategic Plan

1. Preamble

For the past twenty years of its existence, the University of Buea has invested considerable efforts in building its reputation as an institution committed to quality research, teaching and outreach. The Institution endeavoured to develop its research environment within the context of two successive strategic plans (1998-2003 and 2007-2015) and a research policy and management guide (2007-2012). Alongside the institutional efforts, researcher-driven initiatives have led to the emergence of institutional niche areas and significant scientific research leadership in key areas such as human resource management, gender and development, tropical and emerging infectious diseases, climate change, natural hazards assessment and mitigation, aquaculture and mineral exploration. UB, however, still has the challenge to further develop its human resources, infrastructure, research support services, to respond to the changing external environment, increasing regionalisation and internationalisation. The institution also needs to improve its competitiveness in identified niche areas, and expand its competence base in selected emerging research areas of national, regional and global relevance.

The primary purpose of this revised research strategy is to enhance the capacity of the university to cope with change and respond to the expectations of the Cameroonian society, while taking full advantage of identified strengths and opportunities. The research strategy is, therefore, inspired by the evolution of research within the University of Buea, and by national orientation on the role of training and research in getting Cameroon to the status of an emerging economy by 2035. The document also takes into consideration issues concerning staff strength, rapidly growing student populations and challenging staff/student ratios in all programmes, the introduction of new professional programmes and rapidly expanding doctoral training programmes.

Furthermore, the revised plan seeks to position the University of Buea to take full advantage of current regionalisation trends in CEMAC1 and Economic Commission of Central African States (ECCAS) , notably with respect to enhanced collaboration in training and research for development.. In this regard, the plan is going to pay particular attention to the strategic mandate of the University to promote bilingualism, given its proximity to important economic poles in both Francophone and Anglophone West and Central Africa, offering unique opportunities for trans-border collaboration, as well as its unique eco-climatic location in one of the most natural resource-rich areas of Cameroon and Central Africa, providing immense opportunities for research in the areas of biodiversity, food security and renewable energy.

2. Vision

The research vision of the University of Buea is to attain the status of a Higher Education Institution recognised for the quality of its research, contribution to global science and the development of its community (local, national and regional).

3. Research Mandate

The research mandate of the University of Buea is spelt out in Decree No. 93/034 of 19

January 1993 as follows (to):

- Encourage, promote and conduct research in all fields of learning and human endeavour;
- Contribute to national development and promote social and cultural values.

4. Research Mission

The University of Buea will conduct research for sustainable development to enhance the quality of life of Cameroonians. Both fundamental and applied research will be done to address issues of relevance to industry, the local, national and global communities.

5. A Review of Previous Strategic Research Planning at UB (1998-2003 & 2007 – 2015)

Both plans recognised the importance of aligning university research with national development priorities and set the framework for establishing research priority areas. In addition to the two plans, a guiding document on research at the University of Buea was published in 2007. This document defined 11 priority research area expectations of the Cameroonian society and encouraged multidisciplinary, team and applied research for development.

With respect to research development, the 2007 to 2015 plan includes actions aimed at increasing research output, improving the visibility of university research, stimulating collaboration and improving community engagement. This plan identified the training of researchers and research support staff as key mechanisms for establishing an institutional reputation as a research and teaching institution and mobilizing even more resources for research, especially from more diversified sources. The expansion, intensification and effective implementation of University-Industry research and training partnerships were further identified as key mechanisms for attracting endogenous funding and promoting the translation of university research into products and services. The plan also identified some mechanisms and pathways for improving the visibility of research. The two plans were however not explicit on the mobilisation of resources necessary for the implementation and on monitoring and evaluation.

With respect to monitoring and evaluation, the university initiated the preparation of guidelines for reporting research and the review of scientific reports, but did not include the performance indicators that should be used for systematic monitoring and evaluation. There has so far been no rigorous evaluation of the state of research at UB. This gap has been linked to challenges such as, limited funding, insufficient research support staff (in quality and quantity) and lack of critical mass in many disciplines (for timely and credible peer review).

6. Context and environment

The Research Strategy for University of Buea should be aligned with strategic planning in the national and institutional contexts in order to achieve its development objectives and also make successful implementation possible.

The National Context

Within the national context for research in Cameroon, a number of documents have been considered in formulating the present research strategy of the University of Buea. The key documents concerned are:

- **The Poverty Reduction Strategy Paper (PRSP):** This document provides relevant orientations with regard to Cameroon's economic, social, cultural and environmental development challenges that have contributed to its deepening poverty, highlights both short and medium-term growth and development priorities of the country and modalities for participatory monitoring and evaluation of the Poverty Reduction Strategy in Cameroon.
- **The Growth and Employment Strategy Paper (GESP):** The GESP document, which is the outcome of the revision of the PRSP highlights four strategic development priorities in the areas of economic growth, infrastructural development, modernisation of the production system and human development.
- **The Millennium Development Goals (MDGs):** Niche areas specific to Cameroon include: reducing poverty to a socially acceptable level; becoming a middle-income country; becoming a newly industrialised country; and strengthening national unity and consolidating democracy by promoting the ideals of peace, freedom, justice, social progress and national solidarity.
- The CEMAC Regional Economic Programme (PER)
- **The International Context:** The increasing tendency for local researchers to link up with international research bodies across countries that would affect research.

The revised research strategy plan is also inspired by other developments that inform research within and out of Cameroon, such as the regionalisation and internationalisation of higher education research and the shrinking nature of research conducted in research institutes in Cameroon.

8. SWOT Analysis of UB's research capacity

The University of Buea, in its twenty years of existence already has good experience in research and has earned a significant reputation at the national, regional and international levels, notably in the areas of tropical disease research, natural hazard monitoring and mitigation and gender perspectives in natural resource management. There has been a significant increase in external grants awarded to UB. For the past seven years, UB has received a total of 53 external research grants with the University recording on average two new grants annually worth between 200 and 400 million francs.

8.1 Strengths

The University of Buea in its twenty years of existence already has maintained a good reputation as an institution that values excellence in teaching and research. The research strengths of UB are reflected in:

- The production of good research results in some areas (applied biotechnology, climate change, environmental science, gender, science of education, health sciences, agriculture, animal production, African languages and cultures, etc.).
- The devoted academic and administrative staff who are resourceful and dynamic.
- Possibilities for establishing cross-disciplinary research mainly through externally funded programmes and vibrant institutional collaboration culture.
- Noteworthy track record in winning and managing competitive and externally funded grants.
- A vibrant cooperative portfolio and participation in several international staff and student mobility programmes.
- Existence of relevant structures for research management/administration and uptake.
- Investment in capacity building for the management of research.
- Significant track record of quality scientific output that has received recognition.
- Enhanced collaboration portfolio notably with respect to joint teaching, postgraduate student supervision as well as hosting of international/regional training programmes.
- Networking among research teams
- Improvement in research infrastructure.

8.2 Weaknesses

- Limited endogenous budget allocations for research.
- Limited number of academic staff capable of effectively supervising research activity at doctoral and post-doctoral levels in some establishments.
- Unfavourable staff/student ratios.
- Absence of quality assurance framework for postgraduate student research.
- Inadequate structures and procedures to promote entrepreneurial research related activities in the University.
- Inadequate classrooms and laboratories.
- Inadequate support structures for staff and postgraduate students.
- Inadequate infrastructure and laboratories.
- Limited diversification of funding streams, and especially very limited contributions from the local private sector.
- Lack of appreciation by stakeholders on the role of the university in social, political and economic development.
- Ill-equipped library.
- Inadequate development of endogenous reputable journals to promote research visibility.
- Limited opportunity for mobility for researchers
 - space
 - No university press
 - Lack of High speed and regular internet

8.3 Opportunities

- Growing demand for postgraduate training in a knowledge-based world economy.
- Possibilities for collaborative research partnership with the business world through

which alternative sources of funding for research could be sourced.

- Growing interest of foreign universities to establish cooperation links with UB.
- The university governance provides a framework for professionalization of training and the possibilities of joint research contracts with the local community.
- Enhanced recognition of UB as a host institution for reputable international HEI mobility schemes.

8.4 Threats

- Ineffective and irregular revenue allocation for research.
- Competition from other higher education institutions for limited academic staff.
- Stakeholder apathy to the development of university research.
- High student-staff ratios limiting effective staff time for available research.
- Administrative delays or bottlenecks.
- Absence of a university research ethics committee.

7. Revised Strategic Objectives

The University of Buea has a reputation for its innovative approach to addressing developmental issues within a context of limited resources. The institution will build on this experience to further strengthen its research capacity and competitiveness by implementing the following institutional strategic objectives which are relevant to its research mandate:

Objective 1: Stimulate quality research and increase output

Critical success factors

- Research funding for young researchers in the form of seed grants.
- Recognition and award systems for research excellence that can motivate researchers is in place.
- Provision of an ethics policy and practice framework that ensures responsible conduct and compliance
- Adequate support to emerging researchers comprising the following:
 - A formal process of mentoring young and emerging researchers by senior researchers;
 - Development of research teams constituting both well established and emerging researchers based on their respective areas of competences;
 - More efficient and effective reporting of activities and output of mentors and mentees.

Objective 2: Improve scientific productivity and output of young and women researchers

Critical success factors

- Realistic teaching assignments, especially for young/emerging researchers;
- An awareness of an institutional research culture, that is, where the institutional values are recognised and shared by all stakeholders;
- Realistic allocation of funding and accompanying development of infrastructure;
- Effective schemes for facilitation of research are in place;

- Effective strategies for promoting women researchers are in place.

Objective 3: To ensure effective communication, dissemination and communication of research results for visibility and uptake

Critical success factors

- Research uptake management is embedded in policy;
- Institutional and individual capacity for communicating research for uptake;
- The presence of operational systems for tracking and reporting research output where all key components are working and communicating effectively. These components are:
 - i. Reporting on staff and student research by the establishments (responsibility: Researchers, Principal Investigators, Heads of Special Research Units, Centres, Laboratories, Programmes, Service Heads in charge of Teaching and Research, Vice-Deans/Deputy Directors, Deans/Directors);
 - ii. Effective collation and packaging of research information (responsibility: Library and Division of Research and Publications);
 - iii. Effective communication of research information to institutional partners responsible for communicating research to all categories of stakeholders;
 - iv. Development and promotion of local scholarly platforms for scholarly dissemination;
 - v. Increased institutional awareness of intellectual property, effective policy and implementation framework;
 - vi. Regular publication of research newsletter or book of abstract by the research division.
- Effective collaboration between all units involved in uptake and related activities

Objective 4: Enhance the University's contribution to its communities

Critical success factors

- The University is recognised by development actors (community organisation, local government, state departments and private sector) as a valued development partner.
- Appropriate institutional mechanisms to enhance UB's contribution to its communities and address issues of Intellectual Property and commercialisation of research are in place.
- Institution of effective platforms for engaging industry and community partners.
- The products of the University (graduates and research output) are increasingly consumed by external stakeholders.
- Effective implementation of collaborative research partnership between UB and the business world.

Objective 5: Promote collaboration with higher education and research institutes, at national and regional levels (CEMAC and ECCAS)

Critical success factor

- More efficient structuring of research with focus on:
 - Promoting visibility and improving access to research information;
 - Stimulating multi-disciplinary/trans-disciplinary research with different higher

education institutions.

Objective 6: Advance the internationalisation of UB research.

Critical success factors

- Effective collaboration policy and framework is in place.
- Effective implementation of MOUs with foreign institutions.
- Adequate support for staff and student mobility.

Objective 7: Systematically improve the capacity to manage research from idea to uptake/commercialisation.

Critical success factors

- Realistic human development plan that addresses capacity building needs for research support and leadership functions
- Recognition and award systems for research administrators and managers, including visible career paths
- A coherent and visible management structure that clearly defines roles and highlights areas of shared responsibility for research support functions

Objective 8: Maximise revenue mobilisation and recovery in line with the Strategic Plan

Critical success factors

- Adequate resources are made available to research laboratories to promote interdisciplinary research is in place.
- Specialised research units are empowered to leverage external resources (funding, expertise and facilities) for research.
- Institutional budgeting that recognises research as an important activity.
- Consistent and regular funding for research.
- Realistic budgeting of research projects.
- Policy on cost recovery from indirect costs is in place.
- Consultancy activities are effectively organised to generate income for research development.

Objective 9: Use resources to best effect in line with the strategic plan

Critical success factors

- More efficient structuring of research.
- Definition of roles and responsibilities for increased clarity and visibility.
- Improved collaboration between different institutional units and actors.

1. Priority Research Areas

In line with the national strategic research guideline, and taking into cognisance UB's research

strengths, research efforts will be directed towards the following priority areas:

- **Sustainability in natural resource management and exploitation**
Endowed with varied categories of natural resources, it would be imperative to develop innovative strategies to address issues of natural resource depletion as well as issues of sustainable management and exploitation.
- **Food security**
Achieving food security in Cameroon and Central Africa faces several challenges from multiple fronts: rapidly growing populations (Population in low- to middle-income economies is expected to double by 2050 (UN-DESA,2013)), changing dietary preferences, and a fragile food system due to waste and poor distribution (postharvest losses in certain cases represent up to 50% of production). There is inequitable distribution of food and dietary preferences are changing. Agricultural production systems remain inefficient and these challenges are compounded by uncertainties due to climate change and competition from non-food applications for agricultural produce. The University will conduct research on food production, distribution, quality assurance, consumption and governance. Research and development effort in this strategic area will emphasis multi- and trans-disciplinarity in order to develop effective solutions to urgent local and regional challenges and will strongly feature the development of efficient strategies to ensure uptake of results to inform practice and policy.
- **Governance and democracy**
Strategies to improve on governance systems in Cameroon are one of the objectives to promote growth and employment in Cameroon, as outlined in the Growth and Employment Strategy Paper. This would address concerns directed at improving the legal frameworks, promotion of a more accountable, efficient and effective system of governance.
- **Monitoring, modelling and managing risk and change**
This area will integrate a wide range of expertise and tools, notably mathematics and computer science, to conduct basic research. The overall aim will be to improve predictive models for a wide range of challenges that face our populations, such as, climate change, disease control, environmental health, resilience of agricultural systems and economies, sustainability of renewable energy strategies, performance of health systems and the design of better drugs and materials.
- **Biotechnology for health, environment and sustainable technology:**
Biotechnology, defined as all branches of work that use living organisms to create goods and services, offers unique opportunities to tackle some of the challenges that threaten our wellbeing and environment. Research endeavour in this direction would employ both modern and classical biotechnology, drug discovery, phytochemistry and natural products and agro-forestry approaches to document and preserve Cameroon's biodiversity.
- **National languages, literatures, cultures and heritage:** With over 250 local languages and compounded by the bicultural nature of our nation, research effort to development and promotion of the linguistic and cultural heritage of Cameroon is necessary.
- **Regional integration, peace and security:**
With the growing diversity in the world today and the interplay of the forces of

spatial interaction, international trade, industrialisation and globalisation, it is important to conduct research on regional integration from the perspective of the country's comparative advantage, political economy and the need to ensure peace and security. Regional Integration takes place at the regional, continental and global levels. In Africa, there are regional groupings such as CEMAC, ECOWAS, Northern African (Maghreb) Group, and SADC. These regional groupings are under the umbrella of the African Union and numerous other institutions such as the New Partnership for African Development (NEPAD). It is therefore imperative for research to be conducted in the domain of regional integration, peace and security so that Africa can maximise its gains from globalisation, industrialisation and international trade while minimizing the disadvantages. With the recent rebel tensions and terrorist activities in Somalia, Mali, South Sudan, Central African Republic and Nigeria, it is important to foster regional integration and cooperation, so that lasting peace and security can be achieved in a turbulent and belligerent world.

- **Non-fossil fuel energy research and development:**

For a country like Cameroon, energy production and distribution is pivotal to economic growth and development. The focus in the near future is progressive change to low-carbon energy in a carbon-constrained world. The University of Buea shall engage in research in this sphere in a manner that integrates the range of energy sources potentially available but with particular emphasis on the geo-resources of energy (fossil fuels, geothermal, hydro) as well as wind and biogas. Such a scenario will seek to advance knowledge in resource base definition, accessibility, extraction and use, technological and environmental limitations of various energy sources and carbon capture and storage. Particular attention will be given to alternative green energy sources.

- **Development and Social Transformations**

This priority areas focus on the following issues: ongoing development concerns and the concern with post-development age challenges; social side of political and economic transitions (education, health, social security, labour, social policy, social welfare and social development); agriculture and rural development; social movements and the civil society; issues of national cohesion (ethnicity, intercultural relations, social conflicts and inequalities); generational shifts, cultural revivalism and cultural transformations; application of social sciences to specific domains (development, health, agriculture, ecology and the environment, science and technology); and research on global systems (international relations and globalization, environment and climate change, global conflicts, regional integration).

- **Gender:**

This priority area houses the development of framework and issues concerning Cameroon's development. It emphasises decentralisation, good governance and development from a gender perspective. Gender research cuts across the main macro-policy frameworks for the emergence and advancement of Cameroon's development - Growth and Employment Strategy Paper, Poverty Reduction Strategy Paper, Millennium Development Goals, Highly Indebted Poor Country Initiative (HIPC), National Programme on Good Governance and Decentralisation. Some pertinent sub-themes within this priority area include: women's political participation at the local level; engendering civil society particularly at the local level; gender implications of intergovernmental relations and coordination; women's access to services and resources in decentralised systems; Human Rights and development;

women, science and technology; women and the media; and the girl child. The theme requires a multidisciplinary team from the social sciences and other related fields such as health and education to effectively address the sub-research themes in this priority area.

10. Implementing Strategy

The following are guiding principles for an effective implementation strategy:

- An increase in the level of detail with regard to the activities and tasks;
- A reduction in time lines;
- A focus on personal responsibility for specific activities and tasks;
- A clear indication of the resources required;
- A clear definition of the outputs from the specific activities and tasks.

In conformity with its vision and priority research areas, the University of Buea seeks to broaden its implementation strategy by critically adhering to the above mentioned principles.

10.1 Mobilising Financial Resources for Research and UB

Given the fact that a major weakness and threat to the sustainability of research at UB has to do with the inadequate and ineffective internal funding allocation for research, the University of Buea will continue to seek alternative ways of raising funds for research by employing specific mechanisms such as:

- Exploring available partnership and cooperation agreements with other state, para-state and non-state institutions as useful funding sources for university research;
- Improve on the efficiency of income generating units to generate more income for the university;
- Expand possibilities and competitiveness for foreign grants;
- Prepare a good request for research funding from the Ministry of Scientific Research and Innovation (MINRESI). This request must meet the objectives of MINRESI research priority research areas and, in turn, the national strategic research priorities.
- Increase the proportion of faculty and university budgets allocated for research.

10.2 Reinforce the Research Capacity of the University of Buea

Though the recruitment and development of high quality staff is viewed as a key element in enhancing a sustainable foundation for research, this can only be possible when backed by a good research capacity. In this light, the University of Buea undertakes to implement the following strategies to reinforce the research capacity of its staff.

- Training of both academic and support staff in key research concepts and techniques through research training workshops and seminars.
- Expand on laboratories and infrastructure to better accommodate the currently research needs of the university.
- Promote the development of grant proposal directed at building research capacity (such as the RIMI4AC, DRUSSA, etc.).
- Increase the capacity of the research office in order to provide adequate support to researchers.
- Improve on the library and explore strategies of creating a university press in order to enhance impact factor.
- Improve on the availability of ICTs.

10.3 Good governance (leadership, systems and individual capacity development)

- Build on already existing effort to improve on participation and success rates for external funding bids.
- Identify the best possible strategies to improve on its internal funding systems.
- Step up its current efforts by the research office in disseminating all external funding opportunities to staff of the different establishments.
- Provide support in the preparation of grant applications.
- Improve the research capacity of all staff to better support research through periodic seminars and workshops.
- Promote the culture of cross-disciplinary research around identified niche areas.
- Improve support for large scale research projects.

11. Structuring of Research at UB Research Activity Levels

11.1 Management Framework

The organisational framework for the management of research at the University of Buea comprises administrative and research teams/committees/units and overseeing committees

Administrative Units

- The Senate/the Vice-Chancellor.
- DVC in charge of Research/Cooperation.
- The Academic Office/Divisions of Research and Publications, and Cooperation.
- Faculty/School/Manager of Research Centres.
- The Department.
- Research Teams/groups (with emphasis on multi-disciplinary research).

11.2 Overseeing Committees

- University of Buea Research Committee (UBRC)
- Faculty Scientific Consultative Committees (FSCC)
- Departmental Scientific Consultative Committees (DSCC)
- Research teams/groups

11.3 Promotion of Research Ethos among Staff and Students of the University of Buea

The University in its attempt to provide a highly competitive and serene atmosphere for conducting good research, the following application would be strictly adhered to:

- Recognition of a single account administrator to manage the conduct of application for foreign grants, where need be, to be designated by the Vice-Chancellor;
- Full utilisation of the service of the Research and Publications Division in the application, conduct and dissemination research;
- Encourage researchers to update the institution on the progress of research activities in which they are involved. This would go a long way towards enhancing the quality of research at UB and to check issues of academic dishonesty (e.g. plagiarism);
- Regular (monthly, quarterly, yearly) meetings with all researchers to explore further

- opportunities for cross-disciplinary research within the identified niche areas;
- Engage Post-graduate students in conducting research as a means to breed in the philosophy and psychological traits involved in the process.

12. Accreditation of research units

The guidelines for the accreditation of special research units at UB are contained in degree No. 93/034 of 19 January 1993 to create faculties, schools and specialised centres and provisions for the creation of new specialised centres.

The initiative of strategic planning has been accompanied by action to develop and support research through, among other things, the creation of research units.

The early years of UB relied on significant individual researcher efforts that helped the university to earn recognition as a developing world university that prioritises its research and outreach mission and has potential to emerge as a research active university, hosting important centres of excellence.

The Government of Cameroon has also taken action to improve the working conditions of academics in a bid to empower them to more effectively contribute to the triple missions of teaching, research and outreach. The most important government actions in this regard have been the institution of the Research Modernisation allowance and the recruitment of more academic staff. The latter action is expected to help in reducing teaching loads of academic staff to more realistic levels. This should provide time to do research and engage in outreach activities.

The university intends to consolidate the gains made in the early years in a revised research strategic plan (2014 - 2019) by structuring research so as to: promote collaborative and interdisciplinary research, both within and between the institution and external partners; attain a more rational and effective exploitation of resources; enhance visibility of university research; and move closer to the attainment of the goal of excellent and relevant research that has societal impact.

13. Monitoring and Evaluation

The scientific committees (Departmental, Faculty Scientific Consultative Committees and the University of Buea Scientific Research Committee) shall be responsible for the monitoring and evaluation of the research performance of all departments, research units/teams and research centres in the light of the present strategic plan. The reports of these committees shall provide leadership (Deans/Directors of establishments and the centre) with the intelligence necessary for decision-making relative to the review of the plan on an annual basis specifically with respect to the target set in the present plan.

In undertaking this role, the scientific committees shall:

- i. Have regard to the University's aim of gaining recognition as a research active university;
- ii. Receive and consider performance-related data pertaining to research and innovation;
- iii. Benchmark departmental and establishment research performance against that of similar units in research-active universities of comparable context;
- iv. Liaise as appropriate with research teams/units and other university committees;
- v. Make recommendations as required on the university's underpinning support for research,

including financial support, having regard especially to any development or special initiatives;

- vi. Report regularly to Senate and Council through establishment heads or Deputy Vice-Chancellor/RCB as relevant.