

**Science and Technology Education Post-Basic (STEPB)
Project**

Grant Proposal Preparation Guide (GPPG)

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STEPB Project Grants Proposal Preparation Guide (GPPG)

1. Preamble

1. The Grant Proposal Preparation Guide (GPPG) is a tool for post-basic education institutions (PBEIs), research departments or institutions, Ministries, supervisory agencies, and other STEPB partner institutions interested in applying for STEPB Project funding. This Guide should be read in conjunction with the STEPB Project's Procurement Manual, Financial Management Manual, and Project Implementation Manual (PIM) for which the GPPG is an annex. These documents are available at the STEPB Project website or from the National Project Secretariat (NPS). For those questions not addressed in the contents of the GPPG or the manuals, answers can be provided by the NPS.
2. The GPPG describes the information needed by proponents to Component 1—the competitive Quality Enhancement and Innovation Fund (QEIF)—and Component 2—Support for the emergence of Centers of Excellence in post-basic S&T. Whereas the submitted proposals for Components 1 & 2 will be peer reviewed by a Technical Review Committee and the International Advisory Board (in the case of Component 2), proposals for funding through Component 3 are subject to a different process.
3. For Component 3, expressions of interest will be requested by the NPS according to its annual Work Plan. These expressions of interest will coincide with the twice annual calls for proposals that govern Components 1 and 2 unless additional rounds are deemed necessary by the NPS. The Annual Work Plan is formulated by the STEPB National Project Coordinator as described in the Project Implementation Plan (PIP). The information required in these expressions of interest will be made available in the terms of reference issued for such grants. All work will comply with standard procurement procedures (see STEPB Project Procurement Manual).
4. The STEPB project¹ was developed to encourage seed activities related to science and technology within the post-basic education sector with the ultimate aim of supporting demand-driven economic growth. In the first phase of the program, five studies were undertaken by teams drawn from within Nigeria and internationally. The Study Area Reports' main purpose was to identify areas of weakness in post-basic science and technology education and elucidate mechanisms to address them. The reports and their recommendations were developed through a consultative process that included key stakeholders in the public and private sectors as well as civil society. The studies were combined in a single synthesis report available on the STEPB website (www.stepbnigeria.net).

¹ STEPB = Science and Technology Education at the Post-Basic level. It is here defined as senior secondary schools, including technical colleges; polytechnics; monotecnics; teacher education colleges; universities and research institutes. As a group these are called post-basic education institutions (PBEIs) The project is confined to federal institutions. Private sector and non-profit institutions may take part in the project through partnerships with PBEIs and federal S&T institutions. The project is administered by the STEPB National Project Secretariat (NPS).

5. The STEPB project objective (PDO) is for Nigerian federal post-basic education and research sub-sector to produce more and better qualified Science & Technology graduates, and higher quality and more relevant research. The STEPB Project consists of the following three components and sub-components.

Table 1: STEPB Project Component Description			
Component	Sub-Component description	Funding Categories	Major eligibility considerations
Component 1 Quality enhancement and innovation fund (QEIF) in STEPB <i>45%, US\$ 81 million</i>	Sub-component 1A Competitive awards for research and technology development <i>30%, US\$ 54 million</i>	Window A Institutional awards up to US\$ 250,000, <i>18% US\$ 32 million</i> (about 140 sub-projects)	Individual PBEIs can submit a subsequent application if implementation of the earlier sub-project is evaluated to be satisfactory.
		Window B Partnership awards up to US\$ 800,000, <i>10% US\$ 18 million</i> (about 22 sub-project)	Partnerships amongst PBEIs and/or with industry. PBEIs can submit a subsequent application if implementation of earlier sub-project is evaluated to be satisfactory.
		Window C (2) “Innovators of Tomorrow” awards up to US\$ 20,000 <i>2% US\$ 4 million</i> (about 250 sub-projects)	Students in their final year of study in a federal PBEI, graduating with a bachelors, masters or doctoral degree in a S&T area. Awardees must provide evidence of availability of quality supervision and working facilities.
	Sub-component 1B Competitive awards for STEPB teaching and learning in PBEIs <i>15%, US\$ 27 million</i>	Awards up to US\$ 3 million, (about 9-12 sub-projects)	Applications can come from individual PBEIs or groups of PBEIs.
Component 2 Supporting the emergence of Centers of Excellence	Competitive awards for emerging Centers of Excellence	Awards of up to US\$ 7 million (about 7-9 CoEs)	PBEIs can apply to get support to become Centers of Excellence in a S&T area. Applicants will be required to establish (or

30%, US\$ 54 million			have established) links with internationally recognized institutions in their specific S&T area.
Component 3 Supporting sector-wide initiatives and project management 15%, US\$ 27 million	Sub-component 3A 10%, US\$ 18 million Supporting national policy and planning and institutional strengthening	Proposal funding ceilings will be determined by the TRC.	Proposals from federal agencies and professional organizations will be eligible as part of agencies' annual implementation plans (e.g. NUC, NBTE, NCCE, NSE, NAS, STAN, MAN, NITDA, NASENI NARICT).
	Sub-component 3B 5%, US\$ 9 million Supporting STEPB project management and administration		The National Project Secretariat will prepare and propose a project annual implantation plan that will be submitted to the National Project Steering Committee
Unallocated 10%, US\$ 18 million			

Component Descriptions and Funding Ceilings

6. Those PBEIs applying for STEPB Project grants must tailor their proposals to fit into one of the categories (i.e., Sub-components or Windows) of the STEPB Project from Table 1. Component 1 has two separate Sub-components—the first with three windows, the second with one—that allow for a diverse portfolio of grants. Submitted proposals will only be evaluated against those other proposals competing for funds from the same funding category (i.e., Sub-component and Window).

7. This section details the various components, provides the funding ceilings for grants allocated in each Sub-component, and provides examples of eligible proposals to each Sub-component. The following section provides guidelines with respect to proposal writing, submission of proposals, and implementation arrangements.

Sub-component 1A: Competitive grants for research and technology development

8. The three separate Windows of Sub-component 1A address different dimensions of support to research in STEPB PBEIs and their partner institutions in Nigeria. Taken together, these three Windows of Sub-component 1A are intended to improve access to research as part of S&T teaching and learning in post-basic education and support high quality research of relevance to local and national S&T needs. The three Windows in Sub-Component 1A are:

9. *Sub-component 1A, Window A: (18% of total Credit; US\$32 million). Institutional grants of up to US\$250,000 to support S&T research and capacity building within individual STEPB institutions.* This Window is intended to support

high quality S&T research of relevance to local and national S&T needs through around 140 research awards. Applicants may be individual STEPB institutions or a group of institutions working in partnership. Any S&T area will be considered but applicants must justify their proposed area of research in terms of regional, national, and local development needs and private sector needs to demonstrate relevance. Completed proposals will be referred to the Technical Review Committee (TRC) for review. The TRC will ensure that the overall portfolio of awards covers the whole spectrum of national S&T needs.

10. Applications under this Window can include proposals to pursue: (a) pure S&T research; (b) applied S&T research; (c) development of technological ideas, processes, products, and services; (d) research into S&T demands by the labor market; (e) research into S&T education and; (f) research into S&T policy development. Proposals that extend and add value to existing research are encouraged. It is recognized that many PBEIs do not yet have the necessary well-developed infrastructure in terms of access to library material, ICT connectivity or laboratory facilities and technical expertise. Proposals that request help to establish these facilities as a pre-requisite for developing a research grant proposal will be considered as well as an application for the proposal itself.

11. *Sub-component 1A Window B: (10% of total Credit; US\$18 million). Partnership grants up to US\$800,000 to support partnerships between two or more STEPB institutions (groups) and industry.* Around 22 partnership awards will be made for activities involving collaboration between STEPB institutions or between such institutions and industry. The higher threshold for partnership grants will only be available to institutions that form a team of at least two institutions to undertake joint research activities. Partnerships are encouraged to cut across the entire post-basic S&T education sub-sector at the federal level, and, in particular include institutions such as senior secondary S&T education institutions, the private sector, NGOs and government S&T agencies or research-performing institutions. Eligibility and evaluation criteria and examples of areas of activity eligible for grant funding are the same as for Window A.

12. *Sub-component 1A Window C: (2% of total Credit; US\$4 million). Innovator grants of up to US\$20,000 to individual S&T graduates (Bachelor, Masters and PhD) in their final year to encourage "Nigerian innovators of tomorrow".* These will be national competitive awards of up to US\$20,000 to around 120 students yearly. Eligible applicants are students completing their final year of study in bachelors, masters or doctoral programs from a Nigerian tertiary education institution. Applicants for the award must be able to demonstrate exceptional entrepreneurialism and innovativeness in an area of economically promising research and/or technology development. In the application for the award, each proponent will detail their plan to develop or refine a commercially viable S&T idea that is still at the concept stage.

Sub-component 1B: Competitive awards for STEPB teaching and learning in PBEIs

13. *Sub-component 1B (US\$27 million; 15% of total Credit) provides competitive grants for improving S&T teaching and learning to raise quality and relevance, efficiency and equity within participating PBEIs.* This sub-component will make grant awards of up to US\$3 million per proposal for individual or groups of PBEIs focused on improving S&T teaching and learning. Eligible Sub-component 1B proposals are those oriented toward raising quality and efficiency of S&T teaching and learning. About 9 to 12 PBEIs will be awarded grants under this Sub-component over the course of the STEPB Project. Sub-component 1B will also support mechanisms that promote greater access to S&T programs at the tertiary level, particularly for women. All PBEIs are eligible to apply for awards under this Sub-component. Proposals that also aim to improve S&T learning and teaching at the secondary level (by working with secondary schools) will be encouraged.

14. A few examples of the kinds of activities that will be supported by Sub-component 1B are: (a) learning and training opportunities related to identified regional skills needs; (b) teacher and lecturer development and support programs; (c) programs for improving the public understanding of science and technology and for attracting more students, particularly females, to chose a career path in the sector; (d) mechanisms for improving the quality of intake into tertiary S&T programs and reducing failure and drop-out rates; (e) strategies for using ICT to improve STEPB teaching and learning and; (f) cooperation between PBEIs and private sector institutions that lead to more relevant teaching, research and development activities (such as industry internships for students and lecturers, “industrialist in the classroom” programs, mentorship programs with leaders in business for S&T students, etc.).

Component 2: Support for the Emergence of Centers of Excellence

15. *Component 2 (US\$54 million; 30% of total Credit) supports the emergence of Centers of Excellence in post-basic S&T.* The objective of Component 2 is to provide around 7 to 9 of the most promising STEPB institutions with the resources necessary for them to emerge into Centers of Excellence of internationally recognized stature. Grants allocated to the 7 to 9 emerging Centers of Excellence will not exceed US\$7 million per proposal through a competitive selection process described in a subsequent section of this Guide. Centers of Excellence are conceived as institutions that are internationally recognized in their chosen S&T field. In consequence they are able to forge equal partnerships with similar institutions abroad, are able to attract research funding and contracts, and offer sought-after services to Nigerian industry. Such Centers of Excellence are defined by the InterAcademy Council as:

“A research program managed by an institution, an advanced research institute, a network of institutions or operating independently, typically in one geographic location and deemed by merit review to be of the highest international quality in personnel, infrastructure and research output.”²

Inter Academy Council. January 2004. *Investing a Better Future: A Strategy for Building Worldwide Capacities in Science and Technology.*

16. The NPS will organize workshops, technical assistance, and a benchmarking activity to build consensus and enthusiasm among PBEIs interested in applying for STEPB Project funds through Component 2. A few specific examples of emerging Centers of Excellence that might qualify for funding include:

- A university-based center for the study of virology that seeks to build up a wider center for disease control and/or network with other centers focused on epidemiology, virology, tropical disease research, etc., in Nigeria or internationally.
- A university or polytechnic seeking to become a Center of Excellence in solid minerals technology through investments in curricula laboratory equipment, strengthening capacity for minerals analysis, setting up of a mini-processing plant in minerals, recruiting technical assistance in specialized technologies for a limited time (technology transfer) and other related activities that address the strategic objective of the Center of Excellence and national development needs.
- A STEPB institution seeking to become a Center of Excellence in S&T distance learning using e-learning technology.
- A PBEI that wants to evolve into a Center of Excellence in an emerging technology (e.g. nanotechnology, biotechnology or genetic engineering) through the development not only of its own research laboratories and staff competencies but also through international research team links with sister research institutions able to provide complementary services.
- A PBEI seeking to develop into a Center of Excellence in S&T policy studies to support policy development and implementation in Nigeria.
- A PBEI seeking to develop into a Center of Excellence in the teaching and learning of a specified S&T discipline of national interest

17. Examples of activities and items that might be funded for Centers of Excellence are: (a) the purchase of new, modern laboratory equipment; (b) light rehabilitation of essential laboratories (the construction of new facilities will not be supported); (c) cooperative international scientific projects with research teams outside Nigeria; (d) the installation of ICT, library media and related equipment; (e) training of staff for capacity building and management (technical mid-level and higher-level staff and technicians); (f) workshops, conferences, study tours; (g) research stipends; (h) stipends for doctoral students and post-doctoral scholars to conduct research at the centers and; (i) awards to attract visiting professors from outside Nigeria to teach and conduct research at the Centers.

18. Characteristics expected of emerging Centers of Excellence will include the following:

- Productive partnerships with overseas and African institutions of acknowledged expertise in the area of focus of the Center of Excellence. These include not only collaborative research and development partnerships but also activities such as training (at all levels), electronic sharing of teaching and learning materials, and regular exchange of staff;
- Productive partnerships within Nigeria with private sector institutions, other PBEIs, government agencies and NGOs in the area of expertise of the Center;

- Well-equipped facilities for research and development;
- An effective and efficient program producing high quality graduates (with particular attention to female graduates) at all levels in the discipline of the Center that meet the demands of the labor market;
- A consistent and sustainable output of peer-reviewed research papers, patents, research and consultancy reports;
- A verifiable impact on socio-economic and technical development and ultimately on the quality of life in Nigeria.

Key features of competitive STEPB grants proposals

18. The STEPB project invites institutions and their partners in the post-basic S&T education sub-sector to submit proposals for Components 1 and 2 that address priority issues identified in the study area and synthesis reports. Selected proposals will be:

- innovative
- clearly-focused
- achievable
- responsive to local and national S&T-related needs

19. Selected proposals must demonstrate high probability of impact on two levels. First, they should show evidence of a strong link between the initiative proposed and the strategic objectives of the institution in which they are located. Second, proposed initiatives should be likely to improve Nigeria's economic development in relation to the development priorities defined in NEEDS and the various SEEDS. Collectively the funded grants will contribute to strengthening PBEIs through innovations that can be replicated across the system. Grants should focus on the development of new systems and processes rather than the creation of infrastructure. Capacity building should be a central element. Proposals that bring together several institutions are strongly encouraged, particularly those that involve cooperation between federal institutions at different levels, including secondary schools as well as strategic partners, particularly the private sector, non-governmental organizations, etc. Each partnership should identify a lead institution that will take overall responsibility for project management. Institutions may submit more than one proposal, subject to certain funding thresholds for total STEPB Project participation per institution.

20. Proposals should not include requests for construction of buildings, pay salaries for institutions' staff, or cover student bursaries.

21. A clear structure should exist within each institution applying for STEPB funding to operationalize the proposed activities in a timely manner. This structure should be built upon existing administrative structures and transparent procurement and accounting procedures. Further, it is expected that an institutional contribution to any STEPB grant received will be made to ensure funding sustainability beyond the lifespan of the STEPB project. Each STEPB proposal should include a work plan, a results framework, a monitoring and evaluation framework, a sustainability plan and a convincing strategy on how operational risks (e.g., financial, environmental, etc.) are

to be minimized and, in particular, how corrupt practices will be pre-empted. Grant activities that add value to existing programs are encouraged.

2. Developing the proposal

22. The following aspects should feature in all proposals (20 pages maximum, Annexes excluded). These should be regarded as the minimal set necessary to adequately describe the initiatives for which STEPB funding is being sought. Additional aspects a proponent may wish to include in a proposal to strengthen its quality and competitiveness follow in Table 2.

- Project Title
- Table of Contents
- Summary of the proposed activities/initiatives with detail as suggested in Table 2
- Budget (detailed in the following section)
- Annex: Copy of the institution’s strategic plan
- Annex: Copy of the institutional procurement guidelines
- Annex: Copy of the report of the most recent audited accounts (previous 3 years)

23. Upon receipt of a STEPB grant proposal, the NPS will first ensure that each proposal meets certain required pre-qualifications. These pre-qualifications are listed in the table below. In the event that a proposal does not meet each of the criteria the proposal will be returned to the applicant requesting completion of the proposal before the close of that Call for Proposals.

Table 2: Pre-Qualification Criteria	
Required Criterion for Submission to TRC	Check if “yes”
Required contents and Annexes provided (i.e., title, contact information, audited record of accounts and other Annexes)	
Number of staff required to execute the proposal is not excessive in relation to the number of staff available in the institution applying for the grant	
Evidence that the budget request is manageable and is not excessive in relation to the annual budget of the institution(s)	
CVs of participating individuals attached to the proposal	
Relation of proposal’s objectives to national policy objectives and local, national, or regional needs	
Proposal addresses STEPB issues	
Work Plan attached, clear, and comprehensible	
Objectives and proposed outcomes stated clearly	
Evidence provided of capacity for transparent and accountable procurement, financial management, and auditing procedures	
Appropriate physical facilities and communications networks if the development of these is not a component of the proposal	
If all boxes are checked, then proposal submitted to TRC for review; If any box is not checked, then return	

to applicant for completion before evaluation	
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All proposals that meet each of the pre-qualifications criteria listed above will be evaluated by the Technical Review Committee (TRC). The TRC will receive proposals from the NPS who will have removed all identifying data and assigned a serial number to each proposal.

24. The following explanatory table 3 indicates the elements that if applied in preparing grant applications will enhance the competitiveness of proposals submitted for review.

Table 3: Elements for STEPB grants selection	
Criterion	Scope
Track record of performance in the area of the activity, including a record of cooperation with other institutions	<ul style="list-style-type: none"> Track record might include research, teaching, partnership building, and data gathering. publications, patents, products Collaboration with other institutions might include teaching, research, technology development, product development. Institutions might be public or private, educational or technical, internal or external The added value brought by the different members of the consortium should be clearly indicated
Appropriate physical facilities and communications networks if the development of these is not a component of the proposal	<ul style="list-style-type: none"> It is expected that physical facilities (workshops, laboratories, equipment, ICT networks, etc) should either be able to accommodate the sub-project activities, or that a component of the proposal should address and remedy any deficiencies. These issues should be made explicit in the proposal. Proposals should also demonstrate that the facilities can be appropriately managed and if not, to include the necessary training requirements
Demonstrable human and institutional capacity to manage a project of the size proposed	<ul style="list-style-type: none"> Proponents should show that the number of staff required to execute the sub-project is not excessive in relation to the number of staff available in the S&T-based programs CVs of participating individuals should be attached to the proposals Proponents should show that the budget request is manageable and is not excessive in relation to the annual budget of the institution(s)
Addresses local, regional, and/or national needs	<ul style="list-style-type: none"> The project should be justified in terms of national policy objectives and regional or local needs It should address issues highlighted in the STEPB report
Availability of funding and other support from other sources	<ul style="list-style-type: none"> The full contribution to the sub-project by the proposing institution should be indicated, particularly any contribution that is over and above recurrent expenditure. Contributions may be non-monetary Other sources of funding from outside the institution will be an advantage. Proposals that add additional dimensions and value to existing activities are encouraged

<p>Demonstrable benefits outside the realm of the specific institution(s)</p>	<ul style="list-style-type: none"> • Innovative programs that address the aims of the STEPB Project and could, if successful, be replicated elsewhere or effectively taken to scale are encouraged and proponents should show how such a process can evolve • The promotion of the public understanding of science and technology and of entrepreneurship will be supported • Proposals that support the commercialization of research and development will be supported
<p>Improved human and institutional capacity including enhanced links with partner institutions and improved research teaching and learning quality</p>	<ul style="list-style-type: none"> • Sub-projects should indicate how training needs will be met. These should include training in ICT skills, management skills and technical skills • Realistic estimates should be provided showing how many students will enter programs of higher learning as part of the proposal • The proposals should indicate how proposed improvements in teaching skills are to be brought about • Improved institutional capacity includes enhanced facilities, improvements in research support, improvements in teaching and learning activities, better articulation between different level programs etc. • The added value from the proposed multi-institutional cooperation should be clearly articulated including a sustainability plan for the partnership
<p>Sound project plan demonstrating feasibility, sustainability, risk analysis, achievable timeline, results framework and short start-up period</p>	<ul style="list-style-type: none"> • The plan should be clear, coherent, feasible and realistically achievable in the timeline indicated. It should be clear how it meets its objectives. It must show how it can sustain its impact and outputs after project support ceases • A project work plan should be included which should be detailed for the first year • The anticipated impact of the project should be clearly articulated including, where appropriate, improvements in the quality of teaching and learning, improvements in efficiency of teaching programs, improvements in equity (in particular female enrolment), impact on the labor market, improvements in research capacity and quality • The plan should include a risk analysis and an indicator matrix for all major activities

25. An important part of the assessment of potential STEPB grantees will be an evaluation of applicants' financial management capacity. Evidence of satisfactory internal institutional audits (for the previous three years) in addition to a statement of financial management capacity, and an assertion of the complementarity between the institutional strategy and the objectives of the grant will be required for eligibility. Once approved, grantees will undergo training to comply with the audit requirements of the STEPB project. These audit requirements are detailed in the Financial Management Manual.

STEPB Grant Proposal Budgeting

26. With respect to the budgetary requirements of STEPB Grant proposals, the following key elements must be furnished within any submitted proposal:

1. Detailed budget for the lifespan of the proposed activity
2. Detailed budget for the first year of the grant (for long lists, put information into an annex)
3. Budget available from institutions and other sources (for long lists, put information into an annex)

27. Sound planning is the key to successful STEPB grants administration. All proposals submitted by proponents for STEPB grant selection will contain detailed budgets. These will be reviewed as part of the selection of grantees. Budgets should be detailed for the first year and estimated for subsequent years. Where appropriate, the bases for calculating the budget should conform to standardized actual costs as provided by the NPS. The standard unit costs for common items (e.g., workshops, meetings, running costs of small vehicles, internal TA, external TA, serviced office space per person per year, etc.) are shown in the Project Implementation Plan that can be supplied by the NPS. Grantees' budgets should be submitted in a standardized electronic format (spreadsheet) provided by the NPS and available on the STEPB website. Once winning grants are selected, the budgets contained in their proposals will form the basis of the grant contract and of all future grant administration planning. [If grantees find they need to amend their budgets, they must seek permission to do so in writing from the NPS. Letters to the NPS seeking to amend budgets must provide full justification for the change, and insure that it does not substantially alter the goals or objectives of the research.]

28. The budgets from the proposals will be incorporated into the grant contracts as these are drawn up.

STEPB Grants Implementation Matrix

29. To ensure clear and transparent implementation, monitoring, and evaluation, each proponent must provide a description of how the grant will be implemented, monitored, and evaluated. To do this, each STEPB grant proposal should include an implementation framework. Annex A provides a template of the kind of implementation matrix expected. This template draws the information provided in the proposal together in a coherent table and clarifies the relations between activities, responsibilities for implementation, cost aspects, and results.

30. STEPB project grantees must provide bi-annual reports that identify progress against the indicators included in the implementation, monitoring, and evaluation matrix. These reports will need to be accompanied with auditing, financial management, and procurement records in accordance with the STEPB project Financial Management and Procurement Manuals.

3. Eligibility and selection of STEPB grant proposals

31. In developing STEPB grants proposals, interested proponents are advised to bear in mind the eligibility and selection criteria against which their proposals will be evaluated. These criteria differ for Component 1 and 2 as presented below.

Grants for Component 1

32. Two sets of criteria guide proposal selection for Component 1 listed in Tables 4 and 5 below. Proposals will be allocated points by reviewers according to each category as indicated in the following tables. The total possible score is 100 points. The top proposals in each Sub-component with the most points in each Round will be short-listed.

Table 4: Eligibility criteria	Weighting
Track record of performance in the area of the activity, including a record of cooperation with other institutions (9 points)	9
Transparent and accountable procurement, financial management, and auditing procedures (6 points)	6
Explicit linkage to the strategic objectives of the institution(s) (5 points)	5
Appropriate physical facilities and communications networks if the development of these is not a component of the proposal (5 points)	5
Demonstrable human and institutional capacity to manage a project of the size proposed (5 points)	5

Table 5: Selection criteria	Weighting
Addresses local, regional, and/or national needs (e.g. as defined in the STEPB report, NEEDS document, S&T policy, NPE etc.) (10 points)	10
Availability of funding and other support from other sources (5 points)	4
Demonstrable benefits outside the realm of the specific institution(s) (10)	8
Improved human and institutional capacity including enhanced links with partner institutions and improved research teaching and learning quality (25)	24
Sound project plan demonstrating feasibility, sustainability, risk analysis, achievable timeline, results framework and short start-up period (25)	24

33. The following elements if applied in preparing proposals will enhance the clarity of proposals to be submitted to the Technical Review Committee.

1. How well the activity fits the requirement for it to be an innovative program that addresses the aims of STEPB Project and could, if successful, be replicated elsewhere or effectively taken to scale.
2. The capacity of the institution to manage the grant effectively, transparently and in a timely manner.
3. How effectively the project incorporates the minimum criteria given in Tables 4 and 5 above.
4. The clarity and coherence of the proposal implementation plan and how well the plan addresses the stated objectives.
5. Academic and technical merit.
6. The balance between curriculum reform, staff development and facilities upgrading.
7. The impact of the proposal on:
 - The quality of S&T teaching and learning;

- The quality of S&T research;
 - The relevance of the above for the labor market;
 - Female enrolment in S&T-based programs.
8. The added value provided by the different members of a consortium.
9. The effectiveness of the manner in which the sub-project is integrated into the existing activities of the institution or consortium and how well it addresses the aims in the institutional strategic plan; this will include an evaluation of the financial contribution of the institution.

34. Once received by the NPS, completed proposals are submitted to the Technical Review Committee (TRC) for evaluation. Each proposal is evaluated by at least three separate TRC reviewers with sufficient expertise to make a determination on the quality of the proposal. The TRC submits to the National Project Coordinator (NPC) a ranking of the submitted proposals according to the detailed criteria. The TRC will also recommend one of the following determinations for each grant proposal reviewed:

- The proposal qualifies for funding without any revisions
- The proposal qualifies for funding after minor revisions. In this case the TRC will designate one reviewer to review the revised proposal once resubmitted
- The proposal is promising but requires major revisions. Such proposals will be recommended for resubmission during the next Call for Proposals
- The proposal does not satisfy the minimum criteria. Such proposals will be rejected outright.

35. Successful applicants will have up to 2 years to utilize the funds with the possibility of extension if the funds are not fully utilized within this period. Unsuccessful applicants will be assisted to revise their proposals and resubmit during the next call for funds. Institutions evaluated to have successfully achieved the objectives of the first grant may apply for a subsequent grant within the project duration.

Grants for Component 2

36. Component 2 proposals are processed according to a similar procedure as that for Component 1 but with an additional set of minimum criteria. This additional set of criteria is designed to ensure a stronger link to the proposed Center of Excellence and Nigeria's growth agenda as elaborated in both NEEDS and the various SEEDS. Proposals for Component 2 support should comply with the both the criteria listed for Component 1 and the additional minimum eligibility criteria for Component 2 below in Tables 6 and 7.

37. Grantees are expected to develop comprehensive links with at least one external institution of repute. The process for establishing this link, the justifications for it, and anticipated outcomes should be an element of the Centers of Excellence proposals.

Table 6: Eligibility criteria for Component 2	Weighting
Transparent and accountable procurement, financial management, and	6

auditing procedures	
Feasibility within the existing capacity of the institution	10
Track record of performance and impact in area of activity (e.g., research, teaching, partnership building, data gathering, etc.)	6
Existing ICT capacity in the institution(s)	4
Track record of research results dissemination and collaboration/cooperation with other research, teaching and technology development institutions, firms, entities.	5

Table 7: Selection criteria for Component 2	Weighting
Addresses local, regional, and/or national needs (e.g. as defined in the STEPB report, NEEDS document, S&T policy, NPE etc.)	10
Availability of funding from other sources	5
Sustainability	9
Short start-up period	4
Explicit linkage to the strategic objectives of the institution(s)	5
Overall risk analyses, based on the risks and assumptions related to each component, and procedures in place to minimize risks (e.g., environmental, social, financial risks, etc.)	4
Improved institutional capacity – In terms of enhanced facilities, improvements in research support, in staff competencies, in teaching and learning activities etc	9
Clear project plan with results framework, timeline, risks, M&E framework and indicators	12
Multi-institutional cooperation with public research organizations, private sector companies, industrial organizations, external organizations, NGOs and others (10 points)	10

4. Diversity and Complementarity

38. It is hoped and anticipated that the STEPB project will generate a great deal of interest among Nigeria’s PBEIs and their partners. To ensure a broad spectrum of grants awarded in a range of relevant and high priority disciplines, a mechanism has been created that will factor in complementarity between grants into the grants selection process. Termed the “portfolio criteria,” this mechanism allows assurance of diversity among the final grants awarded chosen from among the short-listed candidates in each Round.

39. Above and beyond the merit of any one individual proposal, the Technical Review Committee will also consider the complementary nature of the proposals when looked at as a portfolio. To serve the purposes of the STEPB project and to ensure the largest total impact of the STEPB project, decisions to maintain diversity and complementarity among the final proposals selected in each round may result in projects with higher scores in essential criteria such as “national relevance” being selected over projects with higher scores in other areas such as “track record of research.” This could mean that if several proposals from the same discipline (biology, for example) score highest in a given Round of competition, the TRC may recommend just the top one or two and then choose other proposals with better scores

in other criteria. This portfolio approach ensures the highest possible national impact of the STEPB project across the whole S&T sector and its various aspects (e.g., scientific and policy research, teaching, learning, infrastructure and technology development, etc.) and disciplines (e.g., fisheries, ecology, ICT, metallurgy, engineering, etc.)

Appealing the decisions of the TRC

40. Applicants for funding under any Component who may be dissatisfied with the recommendation of the TRC or IAB may request a review of the decision within 15 days of its publication. The appeal should address in detail the reasons why they are requesting a review. The review will be carried out within a further 15 days.

5. Proposal Selection and Processing

Component 1

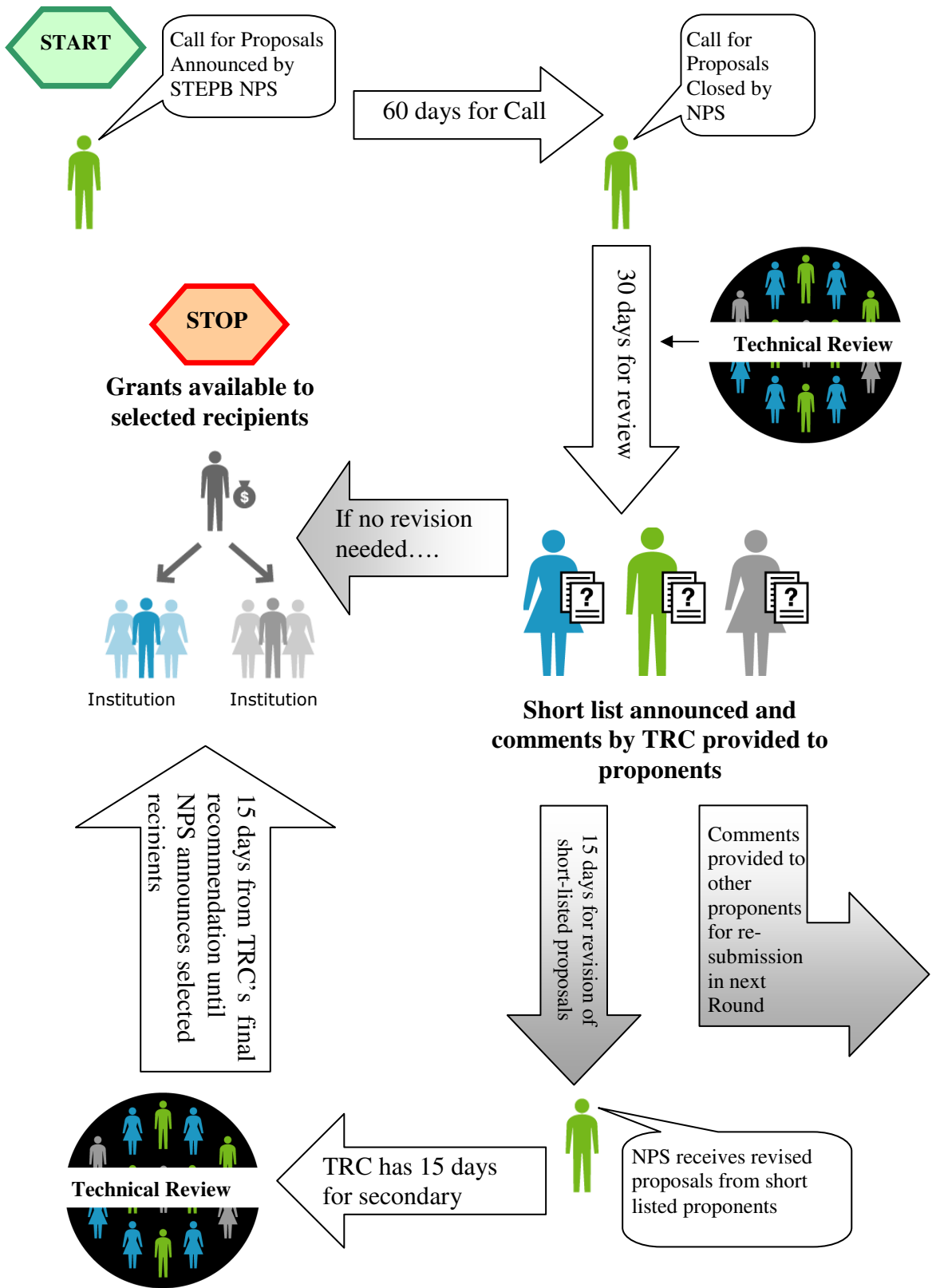
41. Processing of proposals for funding under Component 1 of the STEPB project starts with a Call for Proposals that will be publicly announced by the NPS every six months. There will be 2-3 Calls for Proposals before Mid-Term Review (MTR) of the STEPB project occurs. After this, there may be additional rounds depending on availability of funds. Proposals approved for funding prior to the MTR will continue to be funded, provided that they continue to perform satisfactorily. The sequence of events from a Call for Proposals to public announcement of successful applicants is as follows:

1. Calls for Proposals will be issued two times per year
2. Once announced, a Call for Proposals will remain open for 60 days during which proponents are invited to submit completed applications for STEPB Project financing to the NPS (all submissions must be made in electronic format; hard-copy submissions may accompany electronic submissions)
3. Once the Call for Proposals is closed, the NPS will confirm within 10 days that a proposal has been successfully received; Incomplete proposals are returned to the applicants for completion; The proposals will be screened by the NPS to ensure that all the required documentation has been received and that all prerequisites for evaluation have been met
4. At the close of the Call for Proposals, the NPS forwards the proposals to the Technical Review Committee for evaluation
5. The Technical Review Committee (TRC) will have 30 days to review the proposals and submit their recommendations to the NPS
6. The process of proposal review results in one of four outcomes for every proposal submitted:
 - i. reviewers agree that the proposal is cleared as submitted as a candidate for STEPB Project funding
 - ii. proposal is short-listed for possible funding and the proponent is invited to respond to comments/and or implement minor amendments within 15 days and resubmit the proposal to the reviewers
 - iii. reviewers do not short-list proposal but provide substantial comments and suggestions for amendments which must be

- implemented by the proponent(s) before resubmission in subsequent Calls for Proposals
- iv. proposal does not meet quality and content criteria of the reviewers and is rejected outright
 7. Cleared proposals will be publicly announced on the project website and formally notified by the NPS; Short-listed proposals will also be announced on the project website by the NPS and formally notified of the comments/recommendations of the TRC; As indicated above, short-listed proponents whose proposals could be improved by responding to the comments of the TRC will be given 15 days for revision of their proposals
 8. The TRC will then have 15 days to review the revised proposals before submitting their final rankings to the NPS.
 9. Within 15 days the NPS will publicly disclose the final list of successful proposals, the amounts approved in each case and the names of the principal recipients of STEPB Project grants for that Round of Competition. The announcement will be made on both the STEPB website and in at least one press outlet with national coverage
 10. Proponents of approved proposals will be invited to sign agreements with the National Project Coordinator, NPC, on behalf of Government within 30 days of the announcement of the final list of successful projects. Disbursement of funds to the recipients will be implemented immediately following the signing of this agreement and in accordance with the procurement procedures laid out in the Procurement Manual
 11. Prior to disbursement, the NPC may, as part of his/her fiduciary responsibilities, conduct a visit to any of the recipients for verification of the capacity to implement the project.
 12. All proposals should be designed so that they can start operating as soon as funding becomes available. This implies preparatory work to establish effective operational structures within grant-receiving PBEIs prior to the grant recipients being announced.

The following figure illustrates the process.

Figure 1: Application Cycle for Competitive Grant Proponents for STEPB Project



NPS = National Project Secretariat; TRC = Technical Review Committee

Component 2

40. Processing of proposals under Component 2 will be similar to the procedure described for Component 1 proposals but with the additional set of criteria to ensure a stronger link to Nigeria's growth agenda as elaborated in both NEEDS and the various SEEDS (per Tables 5 and 6 above). As well, the project National Project Steering Committee may issue additional criteria to ensure achievement of the objectives of this Component.

41. Grant proposals for funding under Component 2 will be submitted for evaluation to the International Advisory Board (IAB) that will in turn recommend a shortlist to the TRC. The TRC will then select from the shortlist recommended by the IAB, using a detailed and transparent methodology for awarding points within each criterion. The TRC sends its recommendations to the National Project Steering Committee on behalf of the Federal Ministry of Education (FME) that will approve the final selection. Applicants whose proposal is rejected may appeal the decision in the manner set out below.

6. Submission of the proposal

42. All proposals **MUST** be submitted to the STEPB NPS electronically in either an emailed format, on a CD, or a DVD. The STEPB website offers a mechanism for electronic submission of proposals during a given Round.

43. Interested institutions and consortia should submit their proposals according to the format suggested. Submissions should be made directly to the NPS.

Annex A

Fields of science and technology

1. NATURAL SCIENCES

- 1.1. Mathematics and computer sciences [mathematics and other allied fields: computer sciences and other allied subjects (software development only; hardware development should be classified in the engineering fields)]
- 1.2. Physical sciences (astronomy and space sciences, physics, other allied subjects)
- 1.3. Chemical sciences (chemistry, other allied subjects)
- 1.4. Earth and related environmental sciences (geology, geophysics, mineralogy, physical geography and other geosciences, meteorology and other atmospheric sciences including climatic research, oceanography, vulcanology, palaeoecology, other allied sciences)
- 1.5. Biological sciences (biology, botany, bacteriology, microbiology, zoology, entomology, genetics, biochemistry, biophysics, other allied sciences, excluding clinical and veterinary sciences)

2. ENGINEERING AND TECHNOLOGY

- 2.1. Civil engineering (architecture engineering, building science and engineering, construction engineering, municipal and structural engineering and other allied subjects)
- 2.1. Electrical engineering, electronics [electrical engineering, electronics, communication engineering and systems, computer engineering (hardware only) and other allied subjects]
- 2.3. Other engineering sciences (such as chemical, aeronautical and space, mechanical, metallurgical and materials engineering, and their specialized subdivisions; forest products; applied sciences such as geodesy, industrial chemistry, etc.; the science and technology of food production; specialized technologies of interdisciplinary fields, *e.g.* systems analysis, metallurgy, mining, textile technology and other allied subjects)

3. MEDICAL SCIENCES

- 3.1. Basic medicine (anatomy, cytology, physiology, genetics, pharmacy, pharmacology, toxicology, immunology and immuno-haematology, clinical chemistry, clinical microbiology, pathology)
- 3.2. Clinical medicine (anaesthesiology, paediatrics, obstetrics and gynaecology, internal medicine, surgery, dentistry, neurology, psychiatry, radiology, therapeutics, otorhinolaryngology, ophthalmology)
- 3.3. Health sciences (public health services, social medicine, hygiene, nursing, epidemiology)

4. AGRICULTURAL SCIENCES

- 4.1. Agricultural Education, Agriculture, forestry, fisheries and allied sciences (Soil science agronomy, animal husbandry, fisheries, forestry, horticulture, other allied subjects)

4.2. Veterinary medicine

5. SOCIAL SCIENCES

5.1. Psychology

5.2. Economics

5.3. Educational sciences (education and training and other allied subjects)

5.4. Other social sciences [anthropology (social and cultural) and ethnology, demography, geography (human, economic and social), town and country planning, management, law, linguistics, political sciences, sociology, organization and methods, miscellaneous social sciences and interdisciplinary, methodological and historical S&T activities relating to subjects in this group. Physical anthropology, physical geography and psychophysiology should normally be classified with the natural sciences]

6. HUMANITIES

6.1. History (history, prehistory and history, together with auxiliary historical disciplines such as archaeology, numismatics, palaeography, genealogy, etc.)

6.2. Languages and literature (ancient and modern)

6.3. Other humanities [philosophy (including the history of science and technology), arts, history of art, art criticism, painting, sculpture, musicology, dramatic art excluding artistic “research” of any kind, religion, theology, other fields and subjects pertaining to the humanities, methodological, historical and other S&T activities relating to the subjects in this group]

Annex B

Implementation Matrices

A proposal may consist of one or more components and each component will be executed through a number of activities. Each activity may have a number of sequential steps to be executed. Each step will likely require a number of inputs (means). Most of these means have cost implications.

The following two tables will help in formulating the STEPB grants proposal;

Matrix 1 should be part of the submitted proposal.

Matrix 2 could also be part of the submitted proposal or it may simply be used as a tool to develop Matrix 1. It will be very useful for providing the information needed for illustrating how well the proposal complies with the list of requirements in the preparation guide (such as those in the ‘essential’ and ‘desirable’ lists). In this respect, it often emerges that a proposal may have ‘spin-off’ benefits that are not always obvious if it has not been thought through in detail. Two such ‘spin-off’ benefits in the example given below (S&T teacher INSET) are the creation of a cadre of lead teachers with a training capacity and the development of desktop publishing skills by materials developers. Such additional benefits should be noted in the proposal.

In the example developed to show how Matrix 2 is used **it is be clear that the component has more cost elements (some quite considerable) in it than might be initially obvious.** This kind of breakdown exercise is important to arrive at a realistic sub-component cost.

Implementation matrix 1

This example matrix shows the whole proposal at a glance.

Sub-project:

Component	Activities	Responsibility ³	Year ⁴ -			Cost elements ⁵	Cost from loan fund ⁶	Cost from other sources ⁷	Indicators ⁸	Risks and assumptions
			1	2	3					
Component 1 one sentence description	Activity 1.1 ⁹ one sentence description					element A				
						element B				
	Activity 1.2 one sentence description									
	Activity 1.3 - etc									

³ It is useful to assign a position to this such as 'HoD Chemistry' - the position directly responsible for implementation

⁴ Indicate in which year the activity will be taking place

⁵ There will be several cost elements - briefly describe them – e.g., 'ICT hardware', 'TA', 'Training workshops'

⁶ This indicates the funding from the World Bank STEPB funds

⁷ This indicates the total funding from other sources (include office costs, salaries, etc). State the source.

⁸ Indicators usually refer to the whole component, not individual activities. They should be readily measurable and should indicate what level of the variable is acceptable – e.g., "20% (example) increase in number of females graduating" is better than "increase in number of females graduating"

⁹ For more details of what constitutes and activity, see the next matrix

Component 2 one sentence description	Activity 2.1 - etc					etc				
Etc										

Total funding required _____

Total from World Bank funds _____ (%)

Implementation matrix 2 – Activities

This matrix may help with designing and costing activities. It divides the activity up into each step. Each step should be considered even if it may have no obvious cost, because it may take time and hence may influence what can reasonably be done in the year. Also required is the means (what is needed) for carrying out each step. These will usually have a cost and this should eventually figure in the cost columns in Matrix 1 above

Component 2

Activities	Means and steps	Responsibility	Year ' - insert the cost of each step for each year			Cost from loan fund	Cost from other sources
			1	2	3		
Activity 2.1 one sentence description	Step 1 one sentence description						
	Step 2 Etc						
	Step 3						
	Step 4						
	Step 5 etc						
Activity2.2 one sentence description	Step 1						
	Step 2						
	Step 3 etc						
Activity 2.3 - etc	Etc						

Example

Grant: To provide a long-term in-service assistance program to senior S&T teachers in the region around the HEI.

In this example, the sub-project is divided into four components. Component 2 in this list is used to show how a component consists of a sequence of activities, each of which will proceed by a series of steps. What is needed (the means) to carry out each step can then be identified

- Component 1 Identification of the needs of the teachers
- Component 2 Develop and pilot the INSET program
- Component 3 Evaluate the pilot
- Component 4 Revise and take to scale

Component 2 might expand into the following six or more activities. These activities imply that the assistance program will involve the production of teaching materials and the purchase of equipment which will be supplied to each participating school. It also implies that the training work will be done mainly by a small team of additional staff (called ‘internal technical assistance (TA)¹⁰’ and perhaps good school science teachers), some of whom might also assist with the materials development. This process could include the costs of the hardware and software needed to produce good quality materials, together with associated training.

- Activity 2.1 Assemble the program team and develop the program
- Activity 2.2 Materials development; develop teaching and training materials packages around selected topics identified in component 1.
- Activity 2.3 Develop equipment packages for use in training the selected topics
- Activity 2.4 Train trainers
- Activity 2.5 Round 1 of training workshop sequence
- Activity 2.6 Round 2 of training workshop sequence
- Activity 2.7 Etc, etc

Every activity should be expanded into means and steps which should go into Matrix 2. Activities 2.1 to 2.4 in the list above might be carried out using the following steps and means

Activity 2.1 Assemble the program team and develop the program structure	
Steps	Means (what is needed to achieve the step)
1 Meetings of program team	2 x 1day meetings (or equivalent)

Activity 2.2 Materials development	
Steps	Means (what is needed to achieve the step)
1 Planning meetings on materials development	3 x 1day meetings
2 Writing materials	Technical assistance, x days local TA 20 days materials writing (some by TA) ICT costs (computer + peripherals + desk top publishing (DTP) and graphics software) Desktop publishing and graphics assistance (and/or training) Secretarial assistance
3 Printing materials	Reprographics costs (could include a photocopier)

Activity 2.3 Develop equipment packages for use in training the selected topics	
Steps	Means (what is needed to achieve the

¹⁰ As opposed to ‘external TA’ - TA recruited from outside the country

- | | | |
|---|--|---|
| 1 | Planning meetings on equipment development | step)
(could be included in activity 2.2 step 1) |
| 2 | Acquisition of equipment | Equipment costs
Preparing and packaging materials
(included in activity 2.2 step 2) |

Activity 2.4 Train trainers

Steps

- 1 Contracting trainers
- 2 Training trainer workshop

Means (what is needed to achieve the step)

- x days local TA
- 1 x 1 week workshop

Activity 2.5 Etc

Annex C

Standardized Actual Costs for Proposal Budget Calculation

Arriving at a realistic overall cost of a subject - particularly one that involves a mass of small costs like training - is often not a simple matter. Each submission will require checking to ensure that the estimates are realistic and that too, can be just as difficult.

To simplify all these processes, the cost estimates for each submission should perhaps be submitted on a standardized (preformatted) Excel spreadsheet template. This would allow all the unit costs used by each submission to be clearly identified in an initial list and individual ones could be altered if it is felt that they were incorrect without having to rewrite the whole submission.

Developing such a template would also help in project preparation because a number of common unit costs could be worked out beforehand and used across all proposals. These would also assist with developing internal budget lines to enhance clarity in individual sub-project accounting.

The table shows a number of unit costs¹¹

Item	Cost (=N=)
Cost of a small city vehicle	3,125,000.00
Cost of a 4x4 vehicle	5,080,000.00
Annual running costs of a small vehicle (fuel + maintenance)	889,000.00
Annual running costs of a 4x4 vehicle (fuel + maintenance)	1,270,000.00
Per capita national workshop/meeting cost (4 days transport, DSA, venue, etc)	190,500.00
Per capita regional workshop/meeting cost (4 days transport, DSA, venue, etc)	63,500.00
Internal TA (per week)	127,000.00
External TA (per week)	444,500.00
External TA DSA/week	311,150.00
Return flight Europe	190,500.00
Per capita/per day study visit Europe/USA/Southern Africa	254,000.00
Printing and publishing - per 1000 pages	9,525.00
Serviced office space /person/year (important for calculating institutional contributions)	
Secretarial services /person/month	
Computer + standard peripherals and software	203,200.00
ETC	

¹¹ The costs here are taken from a 2005 [Nigerian](#) Project and are provided as examples only

It is unlikely that all institutions applying for sub-project funding will have experience in using a spreadsheet template. In such cases, it will make greatly expedite the rapid assessment of sub-project applications if all could be persuaded to follow the same procedure for estimating costs.