# CBBIA SMALL GRANTS PROGRAM
# APPLICATION FORM

Application No._____ (CBBIA use)

The conditions relating to Small Grants are detailed in ***'CBBIA Information about Small Grants',*** which should be read before the application is completed. The completed form plus should be emailed to CBBIA Project Administrator, Mr. Napoleon Tiapo, IAIA: Project@iaia.org. Alternatively the form can be completed in hard copy, either typewritten, or handwritten in dark ink, and set out clearly in the spaces provided. The application may not exceed the three sides of the form. Please also supply signed supporting statements from two suitably qualified referees.

**1. Title of proposal**
Indicators of wetland acidification and their relevance to impact assessment

**2. Name and address of applicant, and address:**
Elijah Ohimain

Telephone number: 234-80-23166796

Fax number: 234-53-257858

Email address: eohimain@yahoo.com

**3. Brief summary of the proposal**
Please explain its purpose and relevance to the CBBIA- objectives, the approaches and methods to be used, expected outputs and results

*3a Background*

Environmental impact assessments (EIA) are a well-recognised tool for the prediction, evaluation and mitigation of impacts associated with developments. In the Niger Delta, impacts assessment studies appear not to have adequately addressed issues relating to developments in wetland areas particularly mangroves. Acidification and habitat damage often accompany development in this area. These have made developments in these areas unsustainable and in most cases precautionary principles are not applied.

Being the most extensive and complex low land forest/aquatic ecosystem in West Africa, the biodiversity is of both regional and international importance. Mangrove wetlands are spawning grounds for coastal and marine fisheries and provide feeding and nesting habitats for migratory species. Mangrove ecosystems are therefore of relevance to most of the biodiversity-related conventions including Ramsar, CMS, CITES and CBD. Because of the sensitivity, productivity and high biodiversity of mangrove ecosystems, it is therefore imperative to develop unique tools for impact assessment in these areas.

Worldwide, coastal mangroves are known to contain reduced iron sulphide called pyrite. These pyrites when undisturbed under water cover are innocuous, but their disturbance often results in severe acidification and ecosystem damage.

The application of microbial diversity in EIA is often limited to the determination of faecal pollution and hydrocarbon contamination or biodegradation potential. The intention of this study is to expand the scope of microbial biodiversity in EIA studies particularly in coastal wetlands to include determination of acidification potential. The study will involve field and laboratory data gathering with the intention of identifying indicators (microbial and physico-chemical) for wetland acidification and the incorporation of the findings into EIA guidelines.

*3b Objectives*
The study intend to achieve the following objectives

- Determine indicators of wetland acidification following disturbance/development
- Develop methodologies for predicting acidification upfront i.e. prior to disturbance
- Proffer measures mitigating acidification impacts

Summary of proposal, cont. (use this page if necessary)

*3c Approaches and methods*

The following approaches shall be used to achieve the above stated objectives:

- Field data gathering (sampling, preservation, in-situ analysis etc)
- Laboratory analysis of microbial diversity (particularly sulphur/iron bacteria) and physico-chemical parameters
- The indicators of acidification shall be determined
- Guideline shall be provided for incorporation of the finding into impact assessment

*3d Expected outputs and results (clear deliverables should be identified)*

The following deliverable shall be delivered to IAIA

- Lab data
- Report of the study including extensive literature survey on the subject
- Procedures/guidelines for incorporating microbial into impact assessments

4. Details of costings and funding requirements

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|---|---|
| ❑ Field data gathering (sampling, preservation, on site measurements, GPS determination etc | $3000 |
| ❑ Lab analysis (microbial and physico-chemical), statistics, etc | $5000 |
| ❑ Literature sourcing and review | $1000 |
| ❑ Report writing and production | $1000 |
| ❑ Personnel (2 assistants for 2 months) | $2000 |
| **Total** | **$12000** |

Amount sought from the CBBIA project..... **$10,000**

5. Names and addresses of two referees: At least one referee should be from a different place of work to the applicant. Referees must send their statements to IAIA before the closing date. Applicants should give the referees details of the proposal.

- Dr M. E. F. van Mensvoort, Environmental Sciences Department, Wageningen University and Research, The Netherlands, tini.vanmensvoort@wur.nl
- Dr Omon Isikhuemhen, Department of Environmental Sciences and Natural Resources, North Carolina State Agricultural and Technical University, Greensboro, NC, USA, omon@ncat.edu, omon_isi@hotmail.com

6. Details of other applications (with addresses where appropriate), together with sums sought or awarded, for this proposal.

The proponent and other researchers in Nigeria and Netherlands including Dr van Mensvoort have submitted proposals to the Niger Delta Development Commission, Port Harcourt, Nigeria for the study of acidification with respect to landscape pattern in the Niger Delta.

7. Brief curriculum vitae (qualifications, employment) for main proposer:

Dr. Ohimain is an environmental/petroleum microbiologist whose main focus is on anthropogenic activities affecting the Niger Delta mangroves, particularly dredging, spoils management, drilling, oil spills, soil acidification, hyper-salinization, modification of topography and hydrological regimes. He is looking at developing low cost and locally adaptable biotechnologies for wetlands restoration and management of acidic and heavy metal contaminated dredged materials. He is also involved in developing sustainable dredging practices adaptable to sensitive environments. Although he holds a PhD degree in environmental microbiology, his research is now tending towards microbial/ heavy metal/ mangrove biogeochemistry and sustainable development.

10.Declaration:I certify that the proposal to which this application refers is not supported through any initiatives other than those listed in ‘6’ (above). I confirm that the results of the work undertaken will be the property of the CBBIA. I also confirm my understanding that acceptance of a grant will imply a requirement for the proposed work to comply with the financial, monitoring and evaluation requirements of the CBBIA Program.

Signature:

Date: Thursday, 30 September 2004

FOR CBBIA USE

| Received/Acknowledged | SC: Date / Decision | Amount awarded | Report/due |
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