**Africa Centers of Excellence Project**

**Environment and Social Management Plan**

For low-risk topologies, an alternative to the commonly used “full text” EMP format is to have a checklist approach. The goal is to provide a more streamlined approach to preparing EMPs. This checklist-type format is a “pragmatic good practice” approach to be user friendly and compatible with safeguard requirements.

The checklist-type format attempts to cover typical mitigation approaches to common low-risk topologies with minimal temporary localized impacts. It is anticipated that this format provides the key elements of an Environmental Management Plan (EMP) to meet World Bank Environmental Assessment requirements under World Bank safeguard policies.

The EMP template format has two parts:

* **Part I:** constitutes a descriptive part (“site passport”) that describes the project specifics in terms of physical location, the institutional and legislative aspects, the project description, inclusive of the need for a capacity building program and description of the public consultation process. This section could be up to two pages long. Attachments for additional information can be supplemented if needed.
* **Part II:**  includes the environmental and social screening in a simple Yes/No format (Section A) followed by proposed mitigation measures for any given activity (Section B) and a template for a monitoring plan for activities during project construction and implementation (Section C). It retains the same format required for standard World Bank EMPs.

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| **PART I: Activity Description** |

* 1. PDO

***The Project Development Objectives (PDO) for the proposed ACE II is to strengthen selected Eastern and Southern African higher education institutions to deliver quality post-graduate education and build collaborative research capacity in the regional priority areas.***

Project Beneficiaries

1. **The IDA credit beneficiaries are:**
2. Students in participating universities and their partner institutions across Eastern and Southern Africa who will benefit from high quality education and training in high growth sectors;
3. Employers and targeted industries who will have easy access to high quality/skilled personnel, results of applied research, and scientific knowledge for productivity improvement; as well as knowledge partners (including companies, governmental or non-governmental organizations) who will use research produced by the ACEs;
4. Faculty and staff in the ACEs who will benefit from improved teaching and research conditions and professional development opportunities;
5. Regional institutions such as EAC and SADC will benefit from improved capacity of the ACEs; and
6. Faculty and students in STEM and other priority-sector disciplinary areas who will benefit from fellowships/scholarships, exchange visits, and other knowledge-sharing activities across the ACEs organized by the ACE II Regional Facilitation Unit.

PDO Level Results Indicators

1. The following indicators will be used to measure progress towards achieving the above PDO:
2. Number of non-national/regional students enrolled by the ACEs in Masters and PhD programs in the regional priority areas;
3. Number of students (national and regional) enrolled by the ACEs in Masters and PhD programs in the regional priority areas;
4. Number of nationally or regionally accredited or benchmarked education programs offered by the ACEs; and
5. Number of collaborative research initiatives being launched by the ACEs.
6. With the view of achieving the above described vision and objective, the proposed ACE II operation will implement three sets of initiatives: (i) strengthening 22 higher education institutions into regional ACEs[[1]](#footnote-1) in Eastern and Southern Africa in a set of defined regional priority areas (US$122 million); (ii) providing capacity building support to these ACEs through institution and regional activities (US$13 million); and (iii) supporting coordination and management of the implementation of components (i) and (ii) (US$5 million). Below provides a description of these proposed activities to be financed under ACE II, including the key features of design and implementation.

**Component 1: Strengthening Africa Centers of Excellence (ACEs) in Regional Priority Areas (US$ 122 million)**

1. Under this component, the IDA Credit will finance the strengthening of selected 22 ACEs hosted within higher education institutions into regional ACEs selected through a competitive process in five clusters of regional priorities – Industry, Agriculture, Health, Education and Applied Statistics. Each of these specialized regional centers will receive about US$ 6 million grant for implementing its proposal in a specific regional priority area. However, regardless their specifications, all these ACEs are expected to perform the following tasks:
2. *Building institutional capacity to provide quality post-graduate education with relevance to the labor market*, including, *inter alia,* updating curricula of existing programs or creating new education programs to meet the development challenge; meeting benchmarks for quality education (e.g. national/regional accreditation); attracting a regional student body; training of faculty to introduce new approaches to teaching and learning; enhancing work-place learning; encouraging entrepreneurship among students; upgrading faculty qualifications; and improving learning resources, including lab equipment, and minor rehabilitation or extension of existing facilities.
3. *Building institutional capacity to conduct high quality applied research, relevant to addressing a key development challenge/priority*, including, *inter alia,* faculty development and staff training, fellowships and post-doctoral studies, networking activities with national and international partners, hosting and participating in conferences, research equipment and materials and laboratory refurbishment/rehabilitation, research dissemination, knowledge and technology transfer, and patenting or other intellectual property rights related activities.
4. *Developing and enhancing partnerships with other academic institutions (national, regional and international) to pursue academic excellence*, to raise the capacity of network partners, and to raise the ACE’s capacity, including inter alia, joint delivery of education programs, faculty exchanges/visiting faculty, joint research and conferences, sharing of specialized equipment and library resources.
5. *Developing and enhancing partnerships with industry and the private sector to generate greater impact*, to enhance the impact of the ACE on development and increase relevance of said centers on education and research, including, *inter alia,* industry advisory boards, industry lectures, training of trainers for sector training institutions (such as polytechnics, nursing, teacher or agricultural colleges), joint research, training and other activities to communicate, interact and reach out to civil society, private sector and grassroots communities.
6. *Improving governance and management of the institution and setting up a role model for other higher education institutions*, to improve monitoring and evaluation, including monitoring of labor market outcomes of graduates, administration, fiduciary management (including financial management (FM), procurement, oversight and capacity), transparency, ability to generate resources, and project implementation.
7. *Delivering outreach, and creating an impact, to society by delivering excellent teaching and producing high quality applied research.* Individual ACEs are selected because of the strength of their proposals and their relevance to providing solutions to regional development challenges. By fulfilling their mandate, the ACEs can impact positive change in society and become model hubs of teaching, research and innovation to other institutions in the region.

With the investment of the project, these ACEs are also expected to produce measurable results. Table 1 below outlines what can be expected from these ACEs in training and research in the regional priority cluster areas. [***Please note that this table will be filled once the ACEs are selected and their implementation plans are done, expecting in February of 2016***.]

**Table 1: Expected Results in Training and Research from ACEs by Regional Priority Area**

|  |  |  |  |
| --- | --- | --- | --- |
| Priority Cluster | Post-Graduate Training | | Initiated Collaborative Research |
| # of Masters | # of PhD |
| STEM |  |  |  |
| Agriculture |  |  |  |
| Health |  |  |  |
| Education |  |  |  |
| Applied Statistics |  |  |  |
| *Total* | *XXXX* | *XXX* | *(Not Applicable)* |

1. Unlike many existing centers of excellence in the ESA region which focus primarily on academic research, the selected ACEs under the ACE II project must produce real impact on addressing a specific challenge in one of the priority areas in the region. These priority areas have been defined by the project’s Regional Steering Committee (RSC) after broad consultations in the region. These priorities fall into five clusters – Industry, Agriculture, Health, Education and Applied Statistics. Table 2 below provides information on the areas covered within these priorities. All ACE proposals need to address development challenges in one of the priority areas in order to be considered. To encourage flexibility, innovation and cross-cutting solutions, an ‘unspecified’ category was created to allow preparation of proposals in areas not explicitly listed. This priority list provides guidance for proposal development, but it does not necessarily mean that an ACE would be selected and established for each of these priority areas on the list under this project.

**Table 2: Regional Priority Areas for ACEs**

|  |  |
| --- | --- |
| **Cluster** | **Priority Area** |
| STEM | * Energy (wind/hydro-power, geothermal & solar-energy, energy generation & transmission, etc.) * Value addition / Extractives (oil & gas sector, mining) * Urban design and construction/Infrastructure, transportation and logistics * Disaster/risk analysis and management, hydrology and water purification * ICT (soft/hardware, applications, services, teaching/learning) * Product design, manufacturing, * Railway engineering * Marine and ocean engineering   *Unspecified (room for innovation)* |
| Agriculture | * Agribusiness (crop & livestock sciences, agricultural engineering, agro/food processing & packaging; value chain) * Climate and environmental smart agriculture * Agricultural land management * Water resource management, hydrology and irrigation * Marine and ocean sciences   *Unspecified (room for innovation)* |
| Health | * Pharm-bio technology (drug discovery, science-driven traditional medicine & development) * Bio-medical engineering (implant development, hospital infrastructure, tissue-engineering) * Bio-physics and bio-chemistry (diagnostic tools) * Molecular biology (infectious diseases, vaccine development) * Emergency medicine and trauma (with a focus on traffic injuries & deaths) and nutrition   *Unspecified (room for innovation)* |
| Education | * Quality of Education (innovations in STEM teaching/learning/curriculum development, assessment & management tools, e-learning & education tools, creative design thinking) |
| Applied Statistics | * Applied Statistics (big data, bioinformatics, data mining, reliability modeling, research design, evidence-based policy analysis) |

1. The ACEs financed under the ACE II project are being selected through an open, objective, transparent, and merit-based competitive process. The Call for Proposals was issued on July 31, 2015 and a total of 109 proposals were submitted by the nine participating countries, out of which 92 were deemed eligible[[2]](#footnote-2) by IUCEA. The eligible proposals which covered eight countries[[3]](#footnote-3) were evaluated using a set of clearly defined criteria[[4]](#footnote-4) by an Independent Evaluation Committee (IEC) consisting of over 60 African and international subject-matter experts. The technical evaluation where each proposal was evaluated by three experts produced a shortlist of 40 proposals which then moved into the second phase of the evaluation – onsite leadership evaluation. During the onsite evaluation, members of the IEC visited each of the 40 proposed ACEs and submitted their results to IUCEA. Reviewing the compiled scores from the technical and onsite evaluations, and considering geographical distribution and balance among priority areas, the RSC recommended the conditional selection of 23 ACEs. [***These conditionally selected ACEs are undergoing FM, procurement and safeguards review, and will be confirmed by the WB Board***]. The 23 conditionally selected ACEs were selected to ensure balance across countries, priority areas and importance of the proposal to the region’s development.
2. Of the 109 proposals submitted through the initial call for proposals, there were no proposals in the area of oil & gas due to the current limited capacity for producing much-needed skilled personnel and technology transfer in this area across the region. Given the importance of the oil & gas industry to the economic growth of the ESA region in coming years, oil & gas is listed as one of the regional development priority areas. In order to support the growth of the oil & gas industry for the region, with the spirit of ACE II for real development impact and the guidance of the RSC, the project ran a special targeted call for proposals among the participating countries where there is an emerging oil & gas sector – Ethiopia, Kenya, Mozambique, Tanzania and Uganda. Each of these five countries has submitted one proposal to compete for an ACE in oil & gas for the ESA region. Submitted proposals will go through the same evaluation process as the other ACE proposals did, but with slightly modified criteria to reflect the needs and reality of the oil & gas field in the region at present.[[5]](#footnote-5)
3. The selected ACEs will have the autonomy to implement their own proposals, with the support from their host universities and governments as well as the RFU. For assuring the achievement of targeted results, the ACE II project will employ a performance-based financing mechanism to disburse funding from their respective Ministry of Finance (MoF) to each selected ACE against a set of agreed Disbursement Linked Indicators. To ensure regional collaboration for greater impact, the project will provide a mix of funding requirements and incentives to promote regional mobility of students and faculty, and partnerships with regional and international institutions as well as with the private sector. Each ACE will sign a performance and funding contract with its government (i.e., the Ministry of Education) which will be further developed during appraisal. The contract includes the following criteria:
   * At least 15 percent of the funding must be invested in partnerships and at least 10 percent must be invested in partnerships outside the ACE hosting country.[[6]](#footnote-6)
   * A partnership agreement between the ACE and its respective partners needs to specify the work plan, budget and outcome arrangements.
   * Civil works if needed, should not exceed 25 percent of the total grant.
   * The Government’s existing commitments for continued funding of the institutional staff need to be part of the funding and performance agreement.

**Component 2: Capacity Building Support to ACEs through Institution and Regional Interventions (US$ 13 million).**

1. Under this component, the IDA Credit will finance activities at the institution and regional level to enhance capacity support to the selected ACEs to enable them to achieve their project development objectives. Experience of ACEs in Western and Central Africa suggests that the establishment of ACEs alone is not sufficient to achieve the intended outcome and impact of the project. Weak capacity in areas such as data collection, creating a conducive environment for collaboration, regional student mobility and long term financial sustainability needs to be addressed with additional support through collective mechanisms at the institution and regional level. This component is therefore designed to provide additional support to the selected ACEs to strengthen their capacity so that they can implement their proposals and achieve their objectives as planned, becoming sustainable hubs in their specialized areas and leading efforts to address development priorities for the region. All activities will be implemented by an international TA firm that will be overseen by the RFU.
2. **Sub-Component 2.1: Support to ACEs through Institution Level Activities (US$ 5 million).** Under this sub-component, activities that are targeted towards strengthening the ACE institution level activities including capacity building and university-industry partnerships will be funded. These activities will be financed based on demonstrated need. Interested ACEs will submit proposals which will be evaluated by the RSC on a semi-annual basis. With the RSC’s approval, IUCEA will finance tailored capacity building programs to be delivered to those ACEs. ACEs can request support in the following areas:
3. *Capacity building of the ACE institutions on implementation of their proposal*: While the selected ACEs boast of technical skills in their areas of expertise, management and operational skills to implement their technical proposals efficiently and effectively is not available. There is evidence from ACE I implementation that many selected ACEs faced start-up delays due to weaknesses in their capacity to prioritize; develop detailed sequenced plans; ensure adequate budget; assess and mitigate risks and challenges, including those related to incentives of key stakeholders and implementing partners.  This sub-component will provide (on demand basis) funds to ACE institutions to build capacity to better implement their programs. Funding requests using templates that highlight critical skills gaps and proposed training and capacity building packages will be reviewed by IUCEA bi-annually and funded on a rolling basis. Such training and capacity building could include joint problem solving workshops to address critical challenges faced by the institution in implementing their programs. Detailed reports of the impact of previous training and capacity building along with concrete proposals are needed prior to funding any additional programs from the same institution.
4. *Partnership Development:* Experience from ACEs in Western and Central Africa shows the uneasiness for academic institutions to forge partnerships to receive mentoring support as well as to collaborate on innovative solutions for development challenges. Partnerships, with academic institutions/industry need to be structured such that the ACEs can benefit from these partnerships. The project also recognizes that a critical aspect of developing partnerships is a function of opportunities to meet and share knowledge. Thus, the project will provide opportunities in the form of ACE collaboration forums where ACEs can share good practices from mentorship programs and/or identify research areas of interest to industry and collaborate on research ideas.
5. **Sub-Component 2.2: Support to ACEs through Regional Level Activities (US$ 8 million).** A number of activities will be undertaken at the regional level to support effective relationship-building and methodology adoption/development for quality improvement of ACEs to enhance their excellence.
6. *Benchmarking*: The project will provide funds to interested ACE host institutions to participate in institutional benchmarking in the region, where institutions can compare themselves to similar institutions across the region and with themselves over time, and learn good practices for their own institutional improvement. The project will provide technical assistance to the institutions enrolled in benchmarking to develop comparable data and indicators, data collection protocols, standard reports for all the ACEs and a data platform, and provide training where relevant. There is also potential for the institutions to be part of the Partnership in Applied Sciences, Engineering and Technology (PASET) initiative between SSA and emerging nations. PASET initiated a pilot program that benchmarked seven African institutions by collecting and analyzing a dataset of indicators at the national and institutional level.[[7]](#footnote-7) This exercise enabled the involved institutions to identify major gaps in their data systems. Through this sub-component, ACEs could partner with PASET and through regular benchmarking exercises use benchmarking diagnostic tools to identify areas for improvement and design specific interventions to enable them to reach their potential.
7. *Fellowships/Scholarships*: To raise the regional and global profile of ACEs, the ACE II project will create an ACE Scholars Program– a type of scholarship program to alleviate the financial constraints that are often a barrier to student mobility across countries in the region. It will be merit-based and awarded to two regional fellows per ACE for a period of two years. The project will potentially have DAAD administer this scholarship program. The project also proposes a MacArthur Fellow or Rhodes Scholar – type fellowship program to identify and cultivate future leaders in science and technology for the region. In addition, the project will collaborate with other development partners/ governments and other programs such as PASET’s Regional Scholarship and Innovation Fund (RSIF)[[8]](#footnote-8) to expand the pool of scholarships to encourage students to study in an institution outside their native country in Eastern and Southern Africa. In order to sustain the benefits, the project will coordinate with PASET, and other regional initiatives to expand the pool of scholarships to encourage students to study in an institution outside their native country in ESA.

**Component 3: Facilitation, Coordination and Administration of the Project implementation (US$ 5 million)**

1. This component will be financed in the form of a Regional IDA grant to the RFU. The sheer number of countries and institutions participating in ACE II has added complexity to the project implementation. The RFU is established to help address this issue and ensure the project success. As the RFU for ACE II, IUCEA[[9]](#footnote-9) will coordinate all aspects of ACE II project preparation and implementation, with guidance from the RSC and technical assistance from the World Bank. As part of facilitating regional collaboration and networking, IUCEA will organize a series of knowledge sharing events for all the selected ACEs and their partners. To facilitate learning and knowledge exchange, IUCEA will organize one annual meeting of the ACEs, where experts will be available to assess program quality and offer advice. IUCEA will sponsor two PASET regional forums through which ACEs can form linkages with technical/vocational programs. Finally, to foster university-industry partnerships, IUCEA will host an annual forum with business leaders and industry experts in priority areas. Given its limited capacity, IUCEA will recruit and oversee an international firm to help implement most activities listed under Component 2. To fulfill their responsibility as the RFU, IUCEA is in the process of hiring new staff members such as a project coordinator and a financial specialist to oversee ACE II.[[10]](#footnote-10) IUCEA has received an IDA grant of US$1 million as part of the Project Preparation Advance (PPA).
   1. Institutional and Implementation Arrangements
2. **Each selected institution will implement its own Africa Centers of Excellence proposal**. Further, administrative capacity, most often from the institutions’ central administration will assist with the fiduciary tasks. An ACE team is established, led by a Center leader who is a recognized educator/researcher within the primary discipline of the ACE and supported by faculty from the relevant engaged departments. The university will be responsible for the implementation of the environment management plan under the supervision of the national review committee and the World Bank team. In countries where a related project implementation unit with experience of World Bank safeguard guidelines exists, this unit will provide guidance to the implementing university.
3. **Each government will constitute a National Review Committee through the ministry or agency responsible for higher education**. It is tasked with a semi-annual review of performance and implementation support, including approvals of withdrawal applications and implementation planning (but with no day-to-day implementation or approvals). This committee will include members from Ministry of Finance, as well as relevant line ministries based on the focus area of the ACEs (e. g agriculture, health, oil and gas etc.).
4. The regional ACE Steering Committee will provide overall guidance and oversight for the project.
   1. Environmental screening, assessment and management and World Bank applicable environment policies
5. **Environmental impacts are expected to be low to moderate.** The Environmental Assessment category is B (Partial Assessment), and OP/BP 4.01 (Environmental Assessment) is triggered. There will be some rehabilitation and extensions of the selected institutions. The need for new construction will be assessed as part of the project preparations. There will be no new land acquisition for the Centers of Excellence; the project will select existing institutions. In general, the project will focus on quality enhancements of the Centers of Excellence, which primarily requires "softer items" i.e. faculty and curriculum development, and learning resources, while construction will be capped at maximum 25 percent of the funding, and the rational for proposed new construction will be scrutinized to ensure such construction is critical for excellence. A clear rule on the maximum extent of civil works allowed under the project will be established in the operational manual and the subsidiary agreements between the governments and the universities. Further, ESMP has been prepared and disclosed for each candidate institution to manage environmental and social impacts based on the submitted proposals. For in some cases, the civil works are so minor and localized that they can be guided by national and local laws and procedures, and therefore no ESMP has been developed. The prepared ESMP are disclosed in country and on the World Bank infoshop. In addition, a general set of best practice guidelines for environmental and social management was disclosed in the region in the early stages of project preparation. The ESMP has undergone a set of public consultations, which are presented in Annex A.
   1. Environmental Management Approach
6. **For all regionally funded ACE proposals the attached EMP checklist has been completed and disclosed at the institutional website to comply with environmental and social safeguards**.
   1. Monitoring and reporting
7. **Each Africa Center of Excellence will have its own monitoring and reporting requirements.** This will be consolidated and reported through the general reporting requirements for the national review committee and the World Bank supervisory team to monitor on a regular basis.
8. The responsibility for monitoring of implementation of EMPs has been assigned for each of the Centers of Excellence as following:

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| --- | --- |
| Institution | EMP monitoring arrangements (name, title, contact information) |
| Environmental Affairs Department | Ms Shamisu Najira ([shamisu\_b@yahoo.com](mailto:shamisu_b@yahoo.com); +265999895000) |
| LUANAR | Mr Edwin Chiwona (+265888344298, chiwonaea@gmail.com) |
| University of Malawi, Polytechnic | Dr Ishamel Kosamu ([ikosamu@poly.ac.mw](mailto:ikosamu@poly.ac.mw); 0888654552) |
| University of Malawi, Chancellor College | Ms Meya Kalindekafe ([mkalindekafe@cc.ac.mw](mailto:mkalindekafe@cc.ac.mw); [meykalinde@yahoo.co.uk](mailto:meykalinde@yahoo.co.uk); +265995623338) |
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**Methods of monitoring the identified adverse impacts under AquaFish ESMP**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Key Activity** | **Potential Impacts** | **Monitoring method** | **Frequency of monitoring** | **Provisional Monitoring Cost in USD** |
| Pond construction and rehabilitation | Increase in dust and debris  Noise pollution | Site inspection | Routine | 3000 |
|  | Water quality deterioration | Inspection by skilled personnel | Twice a year | 6000 |
| Management of ponds/cages | Animals or people falling into ponds | Pre-inspection that ponds are fenced | Twice a year | 3000 |
|  | Proliferation of malaria and bilharzia | Inspection by health personnel | Twice a year | 3000 |
|  | Erosion | Site inspection | Once a year | 2000 |
|  | Eutrophication | Site inspection of water quality | Twice a year | 3000 |
| Fisheries management | Deforestation | Site inspection to ensure afforestation and use of alternative energy source for fish smoking | Thrice a year | 5000 |
| Management of water bodies | Erosion leading to siltation  Poor water quality leading to loss of fish diversity | Site inspection by skilled personel to ensure vetiver grass is planted and proper farming practices are followed | Once a year | 2000 |

**Part II : EMP Checklist for Activities**

**AFRICA CENTER OF EXCELLENCE (ACE) II PROJECT**

| **S/N** | **Center Name** | **ESMP required?** | **Issues** | **Mitigation Measures** |
| --- | --- | --- | --- | --- |
| 3 | **MALAWI – AquaFish** | Yes[ √ ] | 1. AQUACULTURE 2. New construction 3. Ponds, cages, tanks and raceways  * Excavation impacts and soil erosion * Increase sediment loads in receiving waters * Increase in dust and noise from demolition and/or construction * Loss of wildlife habitat * Construction waste * Erosion | Water Quality   * The site will establish appropriate erosion and sediment control measures such as planting of vetiver grass or silt fences to prevent sediment from moving off site and causing excessive turbidity in nearby streams and rivers. * Site ponds in flood-free areas |
|  |  |  | Air Quality   * Keep demolition debris in controlled area and spray with water mist to reduce debris dust * Suppress dust during pneumatic drilling/wall destruction by ongoing water spraying and/or installing dust screen enclosures at site * Keep surrounding environment (sidewalks, roads) free of debris to minimize dust * There will be no open burning of construction / waste material at the site * There will be no excessive idling of construction vehicles at sites |
|  |  |  | Noise   * The project will not use heavy machinery |
| Loss of wildlife habitat   * Creating wild life reserves * Rehabilitation of destroyed habitats |
|  |  |  | Erosion   * Plant vetiver grass or any other grass along pond banks and water ways * Ponds should be drainable * Proper siting of ponds in areas with reduced risk of erosion |
|  |  |  | * Management   Ponds, cages, tanks and raceways   * Water pollution (use of fertilizers, chemicals, feed) * Accumulation of wastes (feed) * Air pollution (from ponds, if there is overfeeding) * Health- malaria and   bilharzia (mosquito and  snail breeding grounds)   * Loss of biodiversity (introduced exotic) * Conflict of water use exacerbated by climate change too * Threat to children, livestock and other weak and vulnerable people * Disposal of waste material from processing | Water Quality   1. The site will establish appropriate erosion and sediment control measures such as e.g. hay bales and / or silt fences to prevent sediment from moving off site and causing excessive turbidity in nearby streams and rivers. 2. Encourage use of organic fertilizer 3. Avoid overfeeding which may increase nitrogen and phosphorus load and may encourage eutrophication |
|  |  |  | Air Quality   * Avoid overfeeding in ponds and cages that can cause eutrophication due to loading of nutrients such as nitrogen and phosphorus in formulated feed * Use recommended fertilizer rates * Rehabilitating abandoned ponds * Reclaiming land that was used for pond * Replacement of water periodically * There will be no open burning of construction / waste material at the site |
|  |  |  | Health   * Proper treatment of mosquito and snail breeding grounds * Rehabilitating abandoned ponds * Reclaiming land that was used for pond * Setting up precautionary measures to protect children and other vulnerable groups |
|  |  |  | Biodiversity   * Site ponds away from wildlife habitat areas * Restoration of degraded areas * During stocking of ponds, select species that are not invasive   Containment of escapees |
|  |  |  | Conflict of use of water   * Good planning of water use (involving all concerned users) including water budgeting * Strengthen existing local institutional structures (Village Development Committee, Community Based Natural Resource Management committees) * Water harvesting to increase water quantity available for fish farming |
|  |  |  | Waste management   * Provide recycling bins for collection * Provide potable spill containment and clean up equipment * Engage registered companies to collect specific wastes from fish waste |
|  |
|  |
|  |  |  | 1. **Fisheries Sector**   Environmental Issues   * New construction   Cages   * Conflict of use (navigation and fishing) * Alteration of habitat to fish * Increased nutrient loads in the waters which may lead to eutrophication   Kilns and drying racks   * Deforestation (to get firewood for processing and constructing racks) * Construction waste * Increase in dust and noise from demolition and/or construction * Construction waste | Conflict of use   * Good planning of water use (involving all concerned users) * Strengthen existing local institutional structures (BVC, VDC, CBNRM) |
|  |  |  | Habitat alteration   * Use brushparks for artificial reefs |
|  |  |  | Water Quality   * Avoid overfeeding which may increase nitrogen load |
|  |  |  | Deforestation   * Afforestation * Establishment of woodlots * Use of alternative source of energy for smoking fish |
|  |  |  | Waste Management   * Construction waste will be collected and disposed properly * The records of waste disposal will be maintained as proof for proper management as designed. * Whenever feasible the collector will reuse and recycle appropriate and viable materials (except asbestos) in other agriculture systems. |
|  |  |  |  |
|  |
|  |  |  | Management of water bodies   * Water pollution (use of fertilizers, chemicals, feed) * Erosion from farm areas * Health- malaria and bilharzia (mosquito and snail breeding grounds) * Loss of biodiversity (introduced exotic) | Water Quality   * Establish appropriate erosion and sediment control measures such as planting of vetiver grass or silt fences to prevent sediment from moving off site and causing excessive turbidity in nearby streams and rivers. * Enforce policy of farming at a set distance from river banks and also follow good farming practices that minimizes erosion and siltation * Avoid overfeeding which may increase nitrogen load |
|  |  |  | Health   * Proper treatment of mosquito and snail breeding grounds   Enhancement of snail eating fish stocks |
|  |  |  | Biodiversity   * Each country must follow and abide to set laws on exotic species |
|  |  |  | 3. **Aquaculture Social Issues**  During construction and commissioning of fish ponds   * Land tenure * Land use conflict * Conflicts of water use   During operations of fish ponds   * Child labor * Risks of bilharzias * Some fish species not accepted by some communities   During and after the project   * Threat to food security * Threat to health (HIV/AIDS)   Social amenities   * Increased demand for health services * Increased demand for extension services | * Land use planning * Water budgeting * Strengthen existing local institutional structures (VDC) * Enforcement of child labor law * Implement community sanitation plans * Recommend fish species based on preferences of communities * Integrate aquaculture into existing livelihoods and diversity livelihood opportunities * Sensitize communities * Conduct community sensitization and liaise with Ministry of Health to equip health facilities with enough chemicals/medicine and supplies * Use lead farmers to support the extension services |
|  |  |  | 4. Capture Fisheries Social Issues  During fishing operations   * Limits navigation * Child labour * Safety at sea   During and after the project   * Migration * Threat to health (HIV/AIDS)   Social amenities   * Increased demand for health services * Increased demand for extension services | * Strengthen existing local institutional structures (Beach Village Committees and CBNRM) * Enforcement of child labor law * Capacity building * Strengthen existing local institutional structures to encourage participation of community members in fishing and the entire value chain * Sensitize communities * Conduct community sensitization and liaise with Ministry of Health to equip health facilities with enough chemicals/medicine and supplies * Strengthen existing local institutional structures (Beach Village Committees and CBNRM) |
|  |  |  | 5. **Culture Based Fisheries**  Construction (submerging substrates )   * Hinder navigation * Hinders fishing * Water quality | Navigation   * Zoning of the water bodies for different uses * Encourage participatory planning at the beginning |
|  |  |  |  | Fishing   * Zoning of the water bodies for different uses * Encourage participatory planning at the beginning |
|  |  |  | Water quality   * Regular monitoring of water parameters * Avoid submerging too much substrates |
|  |  |  | Management   * Competition for hatchery fingerlings with aquaculture and limited seed supply * Water pollution (use of fertilizers, chemicals, feed and substrates) * Accumulation of wastes (submerged substrates) * Health (introduction of fish diseases) * Loss of biodiversity (introduced farmed species) * Conflict of water use | Competition for fingerlings   * Increase fingerling production from hatcheries |
|  |  |  | Water quality   * Regular monitoring of water parameters |
|  |  |  | Accumulation of wastes   * Submerge substrates with slow decomposition rates in right quantities. |
|  |  |  | Health   * Quarantine introduced farm fishes * Avoid farmed fish and enhance the natural/wild fish production |
|  |  |  | Biodiversity   * Avoid use of introduced fish |
|  |  |  | Conflict of water use   * Zoning of water bodies * Strengthening community institutions and consultations |
|  |  |  | 1. Socioeconomic impacts  * Relatively new method of culturing fish * Ownership of the culture based fishery * Reluctance by famers to invest in culture based fishery * Conflicts during distribution of benefits | New method of culturing fish   * Increase extension messages * Increase monitoring of communities |
|  |  |  | Ownership   * Use existing local structures to organize communities. * Use of participatory of planning |
|  |  |  | Reluctant to invest   * Provide farmers with an insurance of investment scheme |
|  |  |  | Distribution of benefits   * Encourage equal shares resulting into equal benefits |
|  |  |  | Crosscutting Issues  Gender   * Different gender groups * Ownership and Control * Sharing of household incomes   Travel (Air or road)   * High carbon footprint due to road and air travel by faculty and students | * Equitable targeting of different gender groups * Training and use of transformational approaches on gender (young, aged, disabled, men, women) groups |
|  |  |  | * Encourage use of teleconferencing/ video conferencing and e-learning |
|  |  |  | Ethical  Cultural and Political impacts   * Cultural influence of fish farming on the communities including women involvement in fish farming and marketing * Political influence of the growth and spread of fish farming especially political on sites for the enhancement of rural incomes * Impact of the on religion – like promotion of cat fish in Muslim or Seventh day adventist areas | * Training and sensitization of communities to minimize negative cultural impacts * Working with politicians to avoid politicizing the program * The program will be inclusive of all religious groups |
|  |  |  | Use of paper  High use of paper in training | * Promote e-learning, teleconferencing and emails |
|  |  |  |  |  |

# Annex A : Public consultations

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **MALAWI – AQUAFISH Center of Excellence** | **Date of consultative meeting** | **Stakeholders present** | **Issues raised** | **Response to the issues** |
|  | 12-01-2016 (Bunda campus, Consulting Traditional leaders surrounding Bunda) | Senior Chief Chadza | * Chiefs welcomed the project and assured us that conflict of use in terms of fish feed and human feed may not be as serious as we thought because farers have plenty of ingredients like soya * Chiefs raised a concern on how the project will address an increased demand of water for aquaculture in this era of climate change * Chiefs assured us that they will strengthen bylaws to reduce theft of fish in ponds. | * Most comments were taken on board as indicated in the ESMP above, for instance water budgetting issues. |
|  | Senior Chief Chitseka |
|  | Senior GVH Mwenda |
|  | Group Village Headman (GVH) Chilowa |
|  | GVH Kamgubwe |
|  | GVH Kumitondo |
|  | VH Kunthindi |
|  | VH Mphamba |
|  | VH Kulinga |
|  | VH Jelemiya |
|  | VH Mthiko |
|  |  |  |  |  |
|  | 13-01-2016 (University of Malawi, Chancellor College, Zomba) |  |  |  |
|  | Mrs. M. Kalindekafe | * The participants observed that we need to emphasize more on crosscutting issues such as gender, ethical issues, and heavy use of papers, flights and road transport | * Most of these issues have been incoorporated |
|  | Mr. J. Nagoli |
|  | Mr. D. Mbamba |
|  | Mr. M. Mkandawire |
|  | Mr. P. Likongwe |
|  | Dr L. Mapemba |
|  | Mr V. Mlotha |
|  | 13-01-2016 (Hotel Victoria, Blantyre) |  |  |  |
|  |  | Chifundo Thawi | The participants here emphasized on the need to do the ESMP along the whole fish value chain. |  |
|  |  | Silvester Jambo |  |  |
|  |  | Hoffman L Aipira |  |  |
|  |  | Keith Mwachande |  |  |
|  |  | Geoffrey Banda |  |  |
|  |  | Dr Royal J,B,M Mkandawire |  |  |
|  |  | Robert I Kawiya |  |  |
|  |  | Ishmael B,M Kosamu |  |  |
|  |  | Stanley W. Mvula |  |  |
|  | 13-01-2016 (Capital Hotel, Lilongwe) |  |  |  |
|  |  | Joshua Valeta | * Emphasis here was that the fisheries sector mu be divided into sub categories of capture fisheries, aquaculture and culture based fisheries, in that case the ESMP would flow logically * Water budgetting issue also resurfaced here * It was also pointed out that since this project will be implemented with partners outside Malawi, there maybe need to do simple EIA or just environmental screening in countries where certain activities will also take place just to ensure activities are done in line with WB safeguard rules as well as national rules. | * These issues were taken on board.. |
|  |  | Joanna Mbeye-Chikafa |
|  |  | Brown Chitekwere |
|  |  | Hilda Mkupu |
|  |  | Patricia Ngwale |
|  |  | Agress Bisika Liwonde |
|  |  | Phillip Sefu Nkhoma |
|  |  | Lucky Penumlungu |
|  |  | Brian Rashid |
|  |  | Jeremiah Kang’ombe |
|  |  | Chikondi L. Pasani |
|  |  | Emmanuel Kaunda |
|  |  | Phillip Kaonda |
|  |  | Chimwemwe Magalasi |
|  |  | J.D. Balarin |
|  |  | Wales Singini |
|  |  | Wilfred Kadewa |
|  |  | Edwin Chiwona |
|  |  | Daud Kassam |  |

**SOME PICTORIAL EVIDENCE OF CONSULTATION MEETINGS DONE**



MEETING WITH TRADITIONAL LEADERS (12-01-2016)



CAPITAL HOTEL PARTICIPANTS IN LILONGWE, MALAWI (13-01-2016)

1. The final number of ACEs to be supported by the ACE II project will depend upon evaluation results and availability of IDA funding at both national and regional levels. [↑](#footnote-ref-1)
2. Only those proposals submitted by the governments of the participating countries, with existing PhD programs, and in the defined regional priority areas are eligible for consideration. The eligibility screen was done by the Inter-University Council for East Africa (IUCEA) which is the designated RFU for the ACE II project. [↑](#footnote-ref-2)
3. All the proposals submitted from MZ were deemed ineligible because they came from institutions that did not offer PhD programs, which is an eligible requirement. [↑](#footnote-ref-3)
4. These criteria, together with proposal eligibility and evaluation process, are captured in the “Protocol for Proposal Assessment” that was approved by the RSC as a guideline for the Independent Evaluation Committee. [↑](#footnote-ref-4)
5. For example, the requirement of having a running PhD program is removed and more emphasis is given to partnership with the private sector, etc. [↑](#footnote-ref-5)
6. ACEs are required to spend 10 percent of the partnership funding in partnership with institutions outside the ACE hosting country. [↑](#footnote-ref-6)
7. The seven universities that participated were Gaston Berger University- Saint-Louis (Senegal), the Federal University of Agriculture – Abeokuta (Nigeria), the International Institute of Water and Environmental Engineering (Burkina-Faso), the University of Abomey-Calavi (Benin), Makerere University (Uganda), the University of Dar-Es-Salaam (Tanzania) and the University of Ghana. [↑](#footnote-ref-7)
8. The flagship program of PASET is the Regional Scholarship and Innovation Fund (RSIF) which will contribute to training 10,000 PhDs in applied sciences, engineering and technology and building capacity in selected SSA universities for research and innovation. Funding will be raised through government and businesses, which have already made commitments. The ACE project can potentially help to operationalize the RSIF and raise funding from philanthropic foundations, business leaders and governments. [↑](#footnote-ref-8)
9. IUCEA, an institution of the inter-governmental East African Community (EAC), is headquartered in Kampala, Uganda and headed by the Executive Secretary. Their mandate is to foster collaboration in higher education within the East African Community. [↑](#footnote-ref-9)
10. In addition, during the course of the project, IUCEA will hire either as staff or consultants, whenever there are gaps in personnel. Adequate support and capacity building will be provided to IUCEA by the Bank to enable efficient and effective implementation of its responsibilities. IUCEA has already received training in procurement and FM from Bank staff based in Uganda. [↑](#footnote-ref-10)