

8. CONCLUSIONS AND RECOMMENDATIONS

8.1 After reviewing the potential environmental impact of the six TREFIP outputs, the EIA Team concludes that benefits to be gained from Programme activities will be substantial.

8.2 Likely Programme benefits will include, *inter alia*:

- Establishment of mechanisms for fostering long-term sustainability of the Tanganyika fisheries (LFMZ and LFC partnerships, regional fishery management entity).
- Regulation of fishing mortality, control of resource access.
- Reduction of effort in overexploited fisheries (fleet restructuring in the industrial sector).
- Reduction of destructive fishing methods (beach seining, other methods).
- Protection of biodiversity.
- Reduction of post-harvest losses (improved artisanal processing techniques)
- Reduction of fuelwood demand for fish processing operations (conservation of forest resources)
- Better working conditions and remuneration levels in both the harvest and post-harvest sectors.
- Creation of alternative sources of employment (ecotourism; value-added activities;)
- Availability of superior products for the fish-consuming public.
- Amelioration of soil erosion, sedimentation, and runoff of sewage and other pollutants at local project sites.
- Improved access to villages/landing sites (easier marketing of fresh product, conservation of forest resources).
- Improved environmental awareness within local communities relating to problems of overpopulation and over-exploitation of natural resources, and the means for their resolution.
- Strengthened qualities of social solidarity and civic purpose within local communities, enabling future self-help initiatives.

8.3 As the net impact of these gains would be likely to far outweigh potential risks of adverse effects, the EIA Team endorses the Feasibility Study Mission report and recommends that **Programme content and budgetary provisions should be implemented largely as proposed.**

8.4 The Team nevertheless recognises that Programme activities may in some cases directly or indirectly induce potentially serious environmental problems, or exacerbate problems that already exist within the lake and its littoral districts.

8.5 These negative impacts include, *inter alia*:

- Attraction of new entrants into, or former operators back into, fisheries-related work.
- Increased demand for raw product, leading to increased fishing pressure.

- Localised disruption of soil and plant cover, landscapes, and shoreline substrates attendant upon construction of roads, jetties, central markets, and electricity systems.
- General growth of settlement as ‘economic migrants’ are attracted to commercial and employment opportunities, leading to increases in extractive activities and greater pressure on land and forest resources.
- Exclusion or displacement of would-be fishers or fish workers attendant upon access and licensing limitations, leading to recruitment into other resource extraction employment (woodcutting, charcoal production, etc.).
- Exclusion or displacement of less empowered community members (women, low-income fish workers) from participation in co-management organisations, micro-credit arrangements, or gear/equipment improvement activities.
- Social tensions arising from fisheries access and licensing limitations, or denial of opportunity to participate in Programme initiatives.

8.6 The EIA team therefore strongly believes that **certain Programme components should be significantly expanded**, and that **work plans and budget lines should be modified accordingly**, in order to minimise anticipated risks. These changes relate primarily to mitigation of impacts affecting lacustrine ecology and fish stocks, forestry and land use patterns, and the socio-economic environment.

8.7 Additional Programme costs implied by these recommended expansions amount to an estimated US\$ 1.65 million.

8.8 Successful mitigation will depend on outcomes of partnership initiatives between TREFIP and local communities in **four key areas** – viz. **economic diversification, health, environmental education, and social-economic empowerment**.

Economic diversification

8.9 Imposition of access and licensing limitations within CFMZs, necessary measures for the control fishing pressure and over-exploitation trends, will restrict opportunities for those seeking work in the sector. At the same time, the number of job seekers will continue to increase in lakeshore communities owing to population growth driven both by natural increase and in-migration. Improved infrastructure and services and increased commercial activity resulting from various TREFIP interventions will partly encourage the latter source of growth.

8.10 **Substantial enhancement of Programme activities relating to the identification and encouragement of alternative employment opportunities is therefore indicated.** This should involve the addition of a new post of Community Conservation Advisor within the regional PIU, and of Community Conservation Assistant posts within the respective national projects. Community Conservation staff would work in close co-operation with the Programme Socio-economics team to develop ecotourism potential in and around newly established lacustrine PAs. Other forms of sustainable alternative income generation would also be explored and facilitated as appropriate.

8.11 Planning for these activities should begin during the TREFIP Preparatory Phase, and be completed to coincide with the inception of other activity components within the first set of Programme pilot villages.

Community health

8.12 Continued loading of the Tanganyika basin environment with ever-greater numbers of human inhabitants will further exacerbate stresses on the lacustrine and terrestrial resource systems. These are already subject to unsustainable pressures. From a human welfare perspective, the situation is all the more worrisome because of high incidence of morbidity and mortality, particularly amongst children, brought on by the 'diseases of poverty' complex of malaria, other water-borne infections, STDs, and malnutrition.

8.13 **Substantial enhancement of Programme activities relating to improved community health facilities and services is therefore indicated.** This should involve the addition of a new post of Community Health Advisor within the regional PIU, and of Community Assistant posts within the respective national projects.

8.14 Community Health staff would work in close co-operation with the Programme Socio-economics team and representatives of other relevant agencies and projects to develop family planning, nutrition, and mother and child welfare outreach services. The Community Health Advisor's role should be fashioned as that of primary link between the Programme and government, NGO, and bilateral/multilateral agencies (e.g. USAID, UNICEF, UNHCR) involved with public health and nutrition initiatives within the Tanganyika basin.

8.15 Planning for these activities should begin during the TREFIP Preparatory Phase, and be completed to coincide with the inception of other activity components within the first set of Programme pilot villages.

Environmental education

8.16 The TREFIP Feasibility Study recognises that EE will be of critical importance in raising public consciousness for the adverse effects of unconstrained population increase, invasive agricultural practices, deforestation, and other self-destructive assaults on natural resources and human welfare within the Tanganyika basin.

8.17 It appears to the EIA Team, however, that insufficient provision is made in the draft workplan and budget for EE activities to be mounted at the scale required to produce meaningful results. These can only be achieved by encouraging a widespread recognition within pilot village communities that today's mounting environmental problems are bound to translate into a bleak future of resource depletion and socio-economic deprivation. There would have to be equally widespread realisation that urgent actions to promote balanced growth and ecosystem-based management are necessary to counter such future developments.

8.18 **Marked enhancement of Programme activities relating to environmental education therefore seems indicated.** This would not necessarily entail the addition of a new specialist post within the PIU, providing that allowance is made in the Programme budget and workplan for mobilising adequate amounts of consultant and contracting NGO services and logistical support.

8.19 Particular emphasis should be placed on the use of village video presentations as a major tool for promoting EE and a 'dialogue of sustainability' within local communities. Revision of the TREFIP workplan and budget should be carried out in order to accommodate this emphasis.

8.20 Responsibility for these details should be handled by the TREFIP Co-ordinator working with a PIU staff team composed of Programme advisors in Socio-economics,

Community Conservation, Community Health, and Post-Harvest/Marketing, along with one or more visual media/environmental education consultants with appropriate experience. These personnel would participate as members of a permanent EE task group, based at Programme Headquarters and equipped with basic screening equipment, which would work with contracting NGOs and local communities to identify and develop a video series curriculum. Planning for these activities should begin during the TREFIP Preparatory Phase, and be completed to coincide with the inception of other activity components within the first set of Programme pilot villages.

8.21 Definite targets should be set with regard to how many video presentations should be produced on a custom basis -- i.e., with content specifically tailored for Lake Tanganyika, and how many should be of a more 'generic' nature -- i.e., 'off the shelf' presentations dealing with environmental, family planning, and other pertinent issues on a general level. Clearly lakeside audiences would best relate to presentations that highlight local settings and Tanganyika basin-specific issues.

8.22 Planning of an EE video series should also establish a schedule of screenings to be held in each pilot village or pilot village cluster. In order to maintain a high level of community interest, a screening frequency of once per month per village or village cluster venue would seem desirable.

Socio-economic empowerment

8.23 It would be ironic if Programme efforts to foster co-management mechanisms and responsible fisheries practices actually had the effect of contributing to some of the problems they are intended to alleviate. This could easily occur if women and low-income fish workers were to be denied the possibility of full participation in LFC operations, micro-credit arrangements, technical assistance interventions, and other TREFIP partnership activities. CCRF principles of equitable participation in management decision-making and sharing of industry benefits amongst fisheries stakeholders would thereby be violated.

8.24 **Particular care needs to be exercised to ensure that, as new institutional structures and development interventions are facilitated under Programme auspices, equal opportunity for participation is accorded to all segments of the stakeholder population.**

8.25 So far as can be seen, this would not require the addition of any new Programme staff or elements. It is more a question of cultivating community consensus during the early stages of component activity implementation, and of comprehensive monitoring and follow-up through later stages. The TREFIP Socio-economist, working in close co-operation with the respective national project socio-economists and contracting NGO teams, should assume the lead role in securing 'equal opportunity compliance.'