Day 3 Site Visit Briefings:
“IEE Review”

Instructions

1. ADVANCE HOMEWORK. As advance homework, read (1) the briefing and (2) the “Draft IEE” relevant to your group. Briefly review the Small Scale Guidelines chapter relevant to the field visit.

2. PREPARATORY GROUPWORK (20 min). As a group, review key potential impacts of the activities described in Section 1 of each “Draft IEE.” Discuss primary mitigation/management approaches. Discuss the effects of context on both the significance of impacts & appropriate mitigation approaches.

3. IN THE FIELD (3 hrs), note:
   - The key aspects of the baseline situation that affect the significance of impacts & the type of mitigation that may be appropriate.
   - Look for evidence that the potential impacts you have identified are actual—and if yes, how significant they may be.
   - Look for evidence of the environmental management measures that may be in place, and their effectiveness

4. BACK IN THE CLASSROOM (30 min), and with reference to your field observations, critique the IEE as a group:
   - Does it report the aspects of the baseline situation critical to evaluating the significance of impacts?
   - Does it identify and adequately evaluate key potential impacts?
   - Are mitigation measures adequate?
   - Are recommended determinations reasonable and in accordance with Reg. 216?

Group 1: Smallholder Irrigation Project

Scenario:
Your mission program team has received an activity-level IEE from a partner for a new smallholder irrigation project in a district adjoining Bagamoyo. The activity will be an addition to an existing agricultural development program, but is not covered by the existing SO-level IEE.

You are aware of the Bagamoyo Irrigation Development Project (BIDP), now about 20 years old. The BIDP is closely analogous to the partner’s proposed activity, and the general social, economic and environmental conditions in Bagamoyo closely match those of the proposed site.

You therefore undertake a field visit to the BIDP to better evaluate the IEE you have received.

The description of the BIDP appears immediately below. The draft IEE is attached.

The Bagamoyo Irrigation Development Project.
BIDP is a cooperative union of 128 families. The project started in 1987 –1990 with preparation, site clearing (the site was unforested grassland), surveying and preparation for 80
hectares of farm sites for training. Indigenous farmers who were cultivating rice along the Ruvu river were incorporated into the project.

The project abstracts irrigation water from the Ruvu river which also supplies water for household use and stocks in the area as well as being a source of fish.

By 1995, 100 farmers had been trained but had no land to cultivate. (The original 80ha of the project were for training only.) In response, the Tanzanian government started a pilot farming program with financial support from the Japanese government. 100 hectares of land were taken from the prison department, and 52 ha were allocated to 128 families each getting ¼ hectare.

Support under the project was given to local farmers who would receive training in appropriate wheat and rice cultivation techniques; receive farming inputs and technical services such as soil tests and advice on appropriate fertilizers to use, in exchange for 5 bags of rice. Trainee farmers worked on an acre of land each during the training producing about 35 bags on average. The scheme produced 15 new graduate farmers each year and would allocate to them land for cultivation in the “pilot” section of the land.

From 1997 support from the Japanese stopped but farmers continued to receive support from the Tanzanian government until the year 2000 when the cooperative took over.

Without the financial and technical support, and in the face of declining yields, increasing crop diseases, farmers started using more and more fertilizers (TSP, DAP and Urea) and insecticides (Thionex, Actellic and Fungise.) Production costs soared. To keep costs low, families use more of the family labour rather than hired help.

Since 1991, 250 farmers have been trained. These are from neighboring villages—Kaole, Matimba and Bagamoyo town. Support from the cooperative is in the form of inputs and irrigation, all at a fee of Tsh 100 000 per family per season.

Individual input into the farming is for transplanting, weeding, and harvesting. Each family produces 36 bags of rice, on average, per season translating to an income of Tsh 900 000 on average. Typically, rural dwellers earn less than US $10 a month, so these rice farmers are among the high earners in their communities.

Training still continues for new farmers at a fee of Tsh 200 000.

Group 2: District Hospital Expansion and Rehabilitation

Scenario:
Your mission program team is adding a major activity to your health program. The purpose of the activity is to rehabilitate and expand a number of older district hospitals. The partner was tasked with developing an IEE for this activity, and you have just received the draft.

The final set of hospitals that will benefit from this program has not been determined, but Bagamoyo District Hospital meets the general criteria for the program. You undertake a visit to the hospital to help you assess the IEE.

Bagamoyo District Hospital
Located ~2km from Bagamoyo town and ~200m from the ocean in a settled area, Bagamoyo District Hospital is a 125-bed facility opened in 1972. Initially providing health services largely to fishermen, it now serves tourists and the local community, as well as some patients who travel from Dar es Salaam.

Baseline population growth and the development of tourism and other economic activities in Bagamoyo have substantially increased the population the hospital serves, currently estimated
at about 300,000 households. The number of patients has grown 1000-fold; however, the hospital facilities have not been expanded.

Facilities include dressing rooms, laboratories, maternity wards, general wards, pediatric wards and the mortuary. Canteen facilities are available for hospital staff and patients.

The hospital has 3 doctors, 1 district medical officer and 4 Assistant medical staff. Patients report to the casualty rooms and have their medical complaints registered. Depending on the complaint, they are taken to appropriate unit. The most common serious diagnoses are Malaria, TB, and HIV/AIDS.

The hospital generates significant volumes of medical and non-medical wastes. Facilities available to handle medical waste include special bins for sharps and “red bag” (potentially infectious) waste, and incinerators. In Sept 2007, the incinerator was malfunctioning and unsecured. Children were observed playing 50m from the incinerator. Solid waste is removed to landfill twice/week.

The hospital is not connected to a central sewerage system. A set of septic tanks on-grounds must be pumped out regularly. The hospital is 200 meters from the ocean and less than 100 meters from a school.

The group will have the opportunity to talk with Dr. Dorothy from the environmental health section and to tour the hospital.

Group 3: Mariculture—Prawn and Shrimp Farming

Scenario:
Your mission program team has received an activity-level IEE from a partner for a new prawn and shrimp farming activity in a district adjoining Bagamoyo. The activity will be an addition to an existing coastal communities integrated development program, but is not covered by the existing SO-level IEE.

You are aware that the PRAWN Tanz prawn and shrimp farming enterprise in Kingani village has been under construction.

Kingani is about ~7km from Bagamoyo town, and you believe that the general social, economic and environmental conditions in Kingani closely match those of the proposed activity. You therefore undertake a field visit to PRAWN Tanz to better evaluate the IEE you have received.

The description of PRAWN Tanz appears immediately below. The draft IEE is attached.

PRAWN Tanz enterprise
PRAWN Tanz is a private, small-scale mariculture operation producing saltwater prawns, its ponds, about 2 ha in extent, are situated in a flatland area approximately 2 km from the Indian Ocean and near the Ruvu, one of Tanzania’s principle rivers.

The river provides water for household use and irrigation. Artisanal fishing in the river is a key subsistence and cash-earning activity. Other economic activities in the area are fishing, salt production, livestock husbandry and vegetable cultivation.

The operation is located in Kingani village; however, prior to construction the site was unsettled grassland.

Construction of the ponds started in July 2007, and as of late Sept. 2007, 45 casual laborers had manually cleared the groundcover and completed construction of a perimeter dike and 2 ponds. A reserve/collection pond was also constructed with the intent of collecting fresh
seawater at high tide. A diesel pump and piping was installed to transfer seawater from the reserve to the cultivation ponds. After harvest, the water is discharged.

In Sept 2007, stocking of the ponds was anticipated in October, with prawns to be sourced from hatcheries at the Mbengani college of fisheries. Due to floods in the area, the operation has been suspended for the time being.

Markets for the prawns were identified as hotels in Bagamoyo, Dar es Salaam—with expert to international markets being possible after expansion of the operation. Depending on the project success, plans for processing before shipping would be considered.
IEE for Group 1 Review
“Pilot Smallholder Irrigation Activity”

1. Background and Activity Description
1.1 Purpose and Scope

- This is an activity-level IEE supplementing the existing SO-level IEE covering the “Smallholder Agricultural Productivity and Market Access Program (SAPMA)”
- Its purpose is to provide the first review of the reasonably foreseeable effects on the environment, as well as recommended Threshold Decisions, for the new “Pilot Smallholder Irrigation Activity” of the SAPMA.
- This IEE is necessary as construction & operation of Irrigation Projects is not covered under the parent SAPMA IEE.

1.2 Background

- SAPMA is intended to boost smallholder agricultural productivity with improved varieties and cultivation practices, and to support cooperative processing & marketing
- SAPMA was designed with the intent that improved varieties and practices would be applied to existing smallholder plots. However, experience in the field shows that lack of irrigation infrastructure is a key barrier to smallholder productivity.
- This activity will construct a 200 Ha smallholder irrigation scheme, train farmers, and hand-off management to an existing cooperative. Larger roll-out of this approach (5-10 such schemes) in the next SAPMA phase is anticipated.

1.3 Description of Activities

- **Construction:** Wing dam and intake structure on the Zee river, a tributary of the Ruvu; (intake will be 1km above junction with the Ruvu). Construction of 300m feeder canal to scheme. Estimated diversion is 15% of Zee River median low-flow volume.

  Minimal leveling of 200 Ha site, construction of primary and secondary canals and control gates.

  Construction of 3 dwellings for households currently occupying the site (see below)

- **Operation.** SAPMA will operate the scheme for a 1-season training period and then provide technical assistance to the cooperative for another season.

- **Training and extension.** Cooperative members will be trained in irrigated agriculture techniques (over 1 season) and cooperative and scheme management. Extension services will be provided for a period of 2 years.

2. Country and environmental information

2.1 Locations affected

- 200Ha site is state land. (The site was gazetted and cleared for a state-run plantation in the 1970s. The scheme was never completed.) It lies ~ 100m from Zee river and several kilometers from the ocean. Vegetation is scrub typical of the area.

- Site is uninhabited except for three households illegally occupying the land. Cooperative has already negotiated with these households and they have agreed to
voluntary resettlement near ABC village, a settlement of 200 households ~0.5km distant.

2.2 Applicable Host Country Environmental Policies and Procedures

- Scheme has received approval from the office of the District Commissioner. No further permits or studies are required.

3. Evaluation of Project/Program Issues with respect to Environmental Impact Potential

- **Construction** of irrigation structures can lead to downstream sedimentation.

- **Operation.** Note that operation is only in the purview of this IEE until hand-off to the cooperative. Irrigation schemes have a number of potentially significant adverse impacts, including:
  - (1) salination of soils;
  - (2) contamination of surface and shallow groundwater with seepage and discharge containing pesticides and fertilizers;
  - (3) excessive diversion adversely affecting downstream uses and ecosystems;
  - (4) increased incidence of malaria and similar insect-borne diseases due to increase in standing and stagnant water. Regarding these potential impacts:
    
    Significant salination is unlikely to occur within the period of SAPMA operation and technical assistance.

    SAPMA will not be supplying pesticides. Any pesticide impacts are thus outside the scope of this IEE.

    The scheme will be managed for minimal discharge. And discharge will be to an existing wetland area adjacent to the scheme. Natural filtration and purification functions provided by the wetland should prevent any contamination of the Zee river via surface discharge. Groundwater is used neither on-site nor in ABC village, which receives piped water.

    Impacts of water diversion on the Ruvu are not expected to be significant.

    Stagnant/standing water already exists due to proximity of wetland; any stagnant or standing water associated with the irrigation scheme will be minor in comparison.

- **Technical assistance and extension.** Training and technical extension should have no adverse environmental impacts.

4. Recommended threshold decisions and mitigation actions, including monitoring and evaluation

- A negative determination is recommended for construction activities, subject to the condition that best construction management practices described in the Small Scale Guidelines are followed.

- A categorical exclusion is recommended for technical assistance and extension activities, pursuant to §216.2(c)(2)(i) (education, training and technical assistance).

- A negative determination with conditions is recommended for operation with the condition that the contractor develop and submit a plan for monitoring soil chemistry for any early indications of soil degradation.
IEE for Group 2 Review
“District Hospital Expansion and Rehabilitation”

1. Background and Activity Description

1.1 Purpose and Scope

- This is an activity-level IEE supplementing the existing SO-level IEE covering the “Maternal, Child & Rural Health Support Program” (MCRH).
- Its purpose is to provide the first review of the reasonably foreseeable effects on the environment, as well as recommended Threshold Decisions, for the new “District Hospital Expansion and Rehabilitation” component of the MCRH.
- This IEE is necessary as rehabilitation and expansion of major health care facilities is not covered by the existing IEE.

1.2 Background

- District hospitals are key “anchors” of the public health system. In addition to providing treatment for more serious cases (and quarantine of potentially epidemic diseases), they serve as supervisory and data-collection centers for the clinics and health posts in their districts. District hospitals also act as primary stocking, treatment and distribution points for ITN programs.
- Many district hospitals, particularly in the MCRH target areas, are 35-40 years old, and have undergone no significant expansion or rehabilitation since construction.
- Survey of existing facilities has determined that the planned MCRH activities of medical assistant training and equipment provision will fail to achieve the desired results unless hospital facilities themselves are significantly upgraded.

1.3 Description of activities.
5 District hospitals in MCRH target areas will be chosen according to criteria developed in consultation with the Ministry of Health. For each hospital:

- **Construction of new ward blocks & rehabilitation of existing ones.** The expected result is a 50% increase in bed capacity at beneficiary hospitals (usually ~ 60 beds), with significant improvements to lighting, ventilation and hygiene over existing conditions.

- **Construction and installation of new facilities for management of sharps and “red bag” waste.** At all facilities surveyed, existing incinerators are operating poorly or are non-functional. They are largely non-reparable. New incinerators will be constructed/installed, per attached specification. On-site waste pits will be provided at all hospitals.

- **Rehabilitation and new construction of latrine blocks**

- **Repair or construction of perimeter fences, walls, construction or reconstruction of drainage, and**

- **In consultation with each facility, development of management plans for infectious waste, training of staff, and implementation monitoring.**
2. Country and environmental information

2.1 Locations affected.
- Individual locations vary, but most hospitals eligible for this scheme are in built-up areas. Many were originally peri-urban but are now urban. Often they are co-sited with schools or other public facilities.
- In some cases, adjacent settlement is informal and dwellings lie within hospital grounds.

2.2 Applicable Host Country Environmental Policies and Procedures
- The scheme has been developed in consultation with the Ministry of Health. It will be implemented in active coordination with the MoH and the Administrator of each hospital. MoH will have responsibility for consultation with the office of the District Commissioner. No further permits or studies are required.

3. Evaluation of Project/Program Issues with respect to Environmental Impact Potential
- Construction in built-up areas has nuisance impacts (dust, noise and vibration). In the hospital environment, these impacts can have significant adverse effects on patient health, e.g. on the safety of surgical procedures.
- As environments are urban and otherwise built-up, no adverse impacts on ecosystem functions or biological resources are anticipated.
- Hospitals in operation produce a number of waste streams with potentially significant adverse impacts. While MCRH is not responsible for hospital operations per se, facilities installed under this project will clearly affect waste streams and their management. These impacts are expected to be beneficial:
  1. The effect of this project should be to improve existing waste management of the most biologically hazardous waste streams: sharps and “red bag” waste.
  2. Rehabilitation of wards, construction & rehabilitation of latrines, and drainage improvements will produce a healthier environment for patients, staff and community.
  3. Repair and construction of perimeter fences will reduce opportunities for community exposure to infectious material (particularly by children & livestock.)

4. Recommended threshold decisions and mitigation actions, including monitoring and evaluation
- A negative determination is recommended for all construction activities subject to the conditions that:
  1. good construction management practices specified in the Small Scale Guidelines are followed; and
  2. for each hospital, MCRH develop a mitigation and monitoring plan to minimize the impacts of construction on patients and hospital operations, that this plan give the Hospital Medical Director clear authority to require immediate halt and remedy, and that this plan be approved by the Hospital administrator and medical director.
- A categorical exclusion is recommended for development of management plans for infectious waste, training of staff, and implementation monitoring pursuant to §216.2(c)(2)(i) (education, training and technical assistance).
1. Background and Activity Description

1.1 Purpose and Scope

- This is an activity-level IEE supplementing the existing SO-level IEE covering the “Integrated Coastal Communities Development Program (ICCDP)”
- This IEE is necessary as inland aquaculture activities are not covered by the existing IEE
- Its purpose is to provide the first review of the reasonably foreseeable effects on the environment, as well as recommended Threshold Decisions, for the “Prawn Farm Cooperative Pilot Activity.”

1.2 Background

- Sustainable income-generation activities are critical to the development of coastal communities, and shrimp and prawn aquaculture offers attractive, sustainable returns in a growth market.
- At the same time, professional management and marketing of farms is essential to sustain production & market successfully, particularly for export. In the past, this has prevented equity participation by local residents or village cooperatives.
- As described below, this pilot project is intended to resolve this conflict, demonstrating a prawn farm operations model that provides community equity participation with benefits substantially beyond compensation for casual labor.
- This activity is a pilot for potential larger roll-out of this model in the next ICCDP phase.

1.3 Description of Activities

- In this project, an innovative partnership will be tested in which (1) management and marketing services will be provided by East Africa Prawn, Ltd., a private company, and (2) equity ownership will be held by a village cooperative. East Africa Prawn will draw blueprints and supervise construction without fee.
  (USAID has completed environmental due diligence of review of East Africa Prawn and concludes it is a socially and environmentally acceptable partner.)
- Cooperative members will share in profits according to household labor contributions. Accounts will be independently audited.
- USAID support will fund construction and materials costs related to establishment of the cooperative, and training. Construction will use principally manual labor.
- The facility will use extensive farming methods, with only limited use of feed.
- Construction will include provision of three equivalent dwellings for households currently occupying the site (see below).

2. Country and Environmental Information (Baseline information)

2.1 Locations affected
- A 10 Ha site, mostly comprising salt flats, in coastal flatland typical of area, ap 2km from shore & 300m to Zee river, a major. (See attached environmental and social briefing on coastal communities in this part of Tanzania.)
- Site is adjacent to ABC village, a small coastal settlement of 50 households engaged in a mix of subsistence and small-scale commercial activities typical of the area, principally fishing, salt mining, livestock husbandry and vegetable cultivation.
- Site is uninhabited except for three households who have already agreed to voluntary resettlement in another area of the village.

2.2 Applicable Host Country Environmental Policies and Procedures

- “60m” provision of the TZ Environmental Management Act. This provision prohibits “any human activity of a permanent nature or an activity which by its nature would likely compromise or adversely affect conservation and protection of ocean within sixty metres from the shoreline.”

3. Evaluation of Project/Program Issues with respect to Environmental Impact Potential

- Inland saltwater prawn cultivation has a set of potential significant environmental impacts: (1) destruction of mangrove forests with consequent loss of erosion protection and “nursery” functions, (2) permanent degradation of soils due to build-up of salinity, acidity, and chemicals loads; (3) salination of surrounding agricultural lands; (4) eutrophication and contamination of surface waters receiving pond discharge.

Experience shows that these impacts are controllable with appropriate siting decisions and management protocols. See below.

The proposed site is composed largely of salt flats and is not suitable for other uses; degradation of otherwise fertile land is therefore not an issue.

- Establishment of a cooperative and training should have no adverse environmental impacts.

4. Recommended threshold decisions and mitigation actions, including monitoring and evaluation

- A negative determination is recommended for construction of ponds, storage facilities, and infrastructure, subject to the condition that best construction management practices described in the Small Scale Guidelines are followed.

- Operation of ponds are not funded by USAID and are therefore outside the remit of this IEE. However, as a condition of its management contract, East Africa Prawn will manage operations according to BMPs set out in the Tanzania Mariculture Guidelines Sourcebook.

Note that the use of essentially extensive methods will reduce problems of nutrient and chemical loading of discharge water and sludge accumulation on pond bottoms.

- A categorical exclusion is recommended for the establishment of the cooperative, pursuant to §216.2(c)(2)(i) (education, training and technical assistance).

- A categorical exclusion is recommended for training of cooperative members, pursuant to §216.2(c)(2)(i) (education, training and technical assistance).