

**INITIAL ENVIRONMENTAL EXAMINATION
OR
CATEGORICAL EXCLUSION**

PROGRAM/ACTIVITY DATA:

Program/Activity Numbers: 685-0014

Country/Region: Senegal/West Africa

Program/Activity Title: Casamance Peace Process Advanced

Funding Begin: FY06 **Funding End:** FY10 **LOP Amount:** \$ 4,825,000 DA

Sub-Activity Amount: N/A

IEE Prepared By: Kathryn Lane, USAID/Senegal **Current Date:** May 17, 2006

IEE Amendment (Y/N): N If "yes", Number & date of original IEE: (If amendment of IEE covering current program, which one?)

Other Related Environment Examinations:

ENVIRONMENTAL ACTION RECOMMENDED:

Categorical Exclusion: X Negative Determination: X

Positive Determination: _____ Deferral: _____

ADDITIONAL ELEMENTS:

CONDITIONS: _____ PVO/NGO: ___

SUMMARY OF FINDINGS:

This Initial Environmental Examination (IEE) is directed to the Strategic Objective (685-0014) for the Casamance peace process support program which will include some or all of the illustrative activities listed below. Pursuant to 22 CFR 216, this IEE recommends a threshold decision regarding the potential for negative environmental impact from these activities, the necessity for environmental assessments, and any mitigating actions that might be needed to prevent significant environmental impact.

1. Pursuant to 22 CFR 216.2(c)(1)(i), (v), a **Categorical Exclusion** is recommended for IRs 1 and 2 for all activities involving SO-financed technical assistance for high level peace accord negotiations, local conflict resolution workshops, capacity building with key stakeholders, technical assistance sessions, advocacy campaigns, and information dissemination by radio, theater, etc. These activities do not have an effect on the environment.

2. As per 22CFR 216.3(a)(2)(iii), a **Negative Determination with Conditions** is recommended for IR 3: Improved living conditions of the affected local population for the execution of small rehabilitation and construction activities consisting of one/two room school classrooms, health huts, community wells, and latrines. Because these structures are small in size, made mainly with local materials and using local knowledge, supervised by a licensed professional and conducted in collaboration with the community, the potential negative physical impact on the environment is minimal. For the construction of these facilities that include damaged housing, schools, clinics, latrines, and wells, the Mission SO team will ensure that the Guidelines attached to this IEE (Attachment 1) are properly followed and that the Environmental Guidelines for Small-Scale Activities in Africa (EGSSAA) are used throughout the construction phase. If construction

exceeding 10,000 ft2 is warranted a more detailed environmental assessment would be conducted.

Water and Sanitation conditions:

Both water supply and sanitation activities should be conducted in a manner consistent with the good design and implementation practices described in *EGSSAA Chapter 16: Water Supply and Sanitation*. The SO Team and implementing partners should closely examine this chapter, as it provides a thorough discussion of program design and implementation issues that can help avoid numerous preventable problems. Another useful reference to consult for good water and sanitation design and implementation principles is the document, “Guidelines for the Development of Small Scale Rural Water Supply and Sanitation Projects in Ethiopia,” by Catholic Relief Services and USAID, July 31, 2003.

Water quality testing is essential for determining that the water from a constructed water source is safe to drink and to determine a baseline so that any future degradation can be detected. Among the water quality tests which must be performed are tests for the presence of arsenic. Any USAID-supported activity engaged in the provision of potable water must adhere to Guidance Cable State 98 108651, which requires arsenic testing. That 1998 cable also anticipates “practical guidelines on sampling and testing for arsenic” that were then under development. The EGAT Bureau completed these guidelines, and the Africa Bureau has packaged them in a document titled, “[Guidelines for Determining the Arsenic Content of Ground Water in USAID-Sponsored Well Programs in Sub-Saharan Africa](#).” The SO team must assure that the standards and testing procedures described in this guideline document are followed for potable water supply activities under this program.

Monitoring:

As required by ADS 204.5.4, the SO14 Team and implementing partners will actively monitor and evaluate whether the environmental features designed for the activity are being implemented effectively. The SO Team shall also monitor the need for additional environmental review based on IEE recommendations. SO14, in collaboration with implementing partners, shall ensure that provisions of the IEE, including the conditions and monitoring set forth herein, are incorporated into all contracts, cooperative agreements, grants and sub-grants, as appropriate.

APPROVAL OF ENVIRONMENTAL ACTION RECOMMENDED:

CLEARANCE:

Mission Director: _____ Date: 06/01/06 _____
Olivier Carduner

CONCURRENCE:

Bureau Environmental Officer: _____ Date: June 28, 2006 _____
Brian Hirsch

Approved: XX

Disapproved: _____

ADDITIONAL CLEARANCES:

Mission Environmental Officer: _____ Date: 05/30/06 _____
Aminata Niane Badiane

Deputy Mission Director: _____ Date: 05/23/06 _____
Lisa Franchett

SDO Director: _____ Date: 05/18/06 _____
Jennifer Adams

SO Program Coordinator: _____ Date: 05/17/06 _____
Kathryn Lane

OPTIONAL CLEARANCES:

General Counsel
(Africa Bureau): _____ Date: _____
John Niemeyer

Regional Environmental
Advisor (AFR/SD): _____/cleared/_____ Date: June 7, 2006
Rob Clausen

INITIAL ENVIRONMENTAL EXAMINATION

PROGRAM/ACTIVITY DATA

Program/Activity Number: 685-0014

Country/Region: Senegal/West Africa

Program/Activity Title: Casamance Peace Process Advanced

1.0 BACKGROUND AND PROJECT DESCRIPTION

1.1 Purpose and Scope of IEE

This Initial Environmental Examination (IEE) is directed to the Strategic Objective (685-0014) for the Casamance peace process support program which will include some or all of the illustrative activities are listed below. Pursuant to 22 CFR 216, this IEE recommends a threshold decision regarding the potential for negative environmental impact from these activities, the necessity for environmental assessments, and any mitigating actions that might be needed to prevent significant environmental impact.

1.2 Background

A major constraint to Senegal's development is the protracted armed struggle in its southern-most Casamance region (Kolda and Ziguinchor) Administrative Regions), located between The Gambia and Guinea-Bissau. Twenty-four years of fighting between Government of Senegal (GOS) soldiers and rebels belonging to the *Mouvement des Forces Démocratiques de la Casamance (MFDC)* have adversely affected this high potential region and Senegal as a whole.

The Casamance is potentially one of the richest regions in Senegal, comprising 28,300 square kilometers, which is about 14.4% of Senegal's total surface area. It owes much of this higher development potential to its rainfall rates, which are the highest (around 1,200 mm annually) in Senegal. The Casamance also has many waterways and access to the sea and rich fishing resources. The Casamance is also a major producer of rice, the major staple of the Senegalese people. The Casamance continues to be active in forest products, fruit transformation and fishing industries. The Casamance is also a crossroads for trade with neighboring countries and has some of the largest traditional markets in Senegal. The Casamance was a major destination for tourists. These rich agricultural, fishing, trading and tourism activities have been greatly diminished by the protracted conflict.

At present the local population is extremely weary of the conflict and no longer offers the MFDC the popular support that is previously had. Local and regional voices for peace are very loud and very strong. Key leaders within the MFDC and the GOS are also publicly speaking more forcibly than ever before about the need for a negotiated end to the conflict. The Casamance conflict continues despite many attempts at establishing a cease fire and numerous peace talks.

The Casamance program will assist key stakeholders who are seeking a negotiated peace accord for the Casamance conflict. Key stakeholders need assistance to be able to better carry out a dialogue that will successfully conclude in a peace agreement. USAID assistance will reduce the chances that the peace talks end without finding a compromise; unfortunately, this is how all previous attempts at dialogue have concluded.

The previous Casamance program (Casamance Recovery Program 1999-2006) included many activities that aimed to improve conditions for peace at the local level. Among the more successful were small scale reconstruction activities that both improved poor living conditions, and gave communities the opportunity to address the Casamance conflict and its effects on their lives. This second Casamance program aims to build on the success of the previous program.

1.3 Description of Activities

This is a \$ 4,825,000, five-year program; the goal is to advance the peace process in a sustainable manner. The attainment of the following three Intermediate results (IRs) is required for the achievement of the SO:

IR.1: Improved long-term strategy for peace is implemented by the GOS and MFDC

IR 2: More effective participation by key stakeholders in the peace process

IR 3: Improved living conditions of the affected local population

Keys activities for each of these intermediate are as follows:

IR1: Improved long-term strategy for peace is implemented by the GOS and MFDC

This IR aims to increase concrete action taken by key stakeholders that demonstrates political will for a resolution, to facilitate the peace process to be more participatory, and to improve planning and communications capacity of each key stakeholder group. The Casamance program will mainly focus on giving technical assistance to key stakeholder groups involved in the resolution of the Casamance conflict (GOS, Casamance civil society, and MFDC.) The principal activities will consist of:

- training workshops
- facilitated dialogues
- peace and reconciliation talks
- technical assistance sessions
- local conflict resolution workshops

IR 2: More effective participation by key stakeholders in the peace process

This IR aims to increase the impact of civil society peace advocacy and to increase the capacity of key stakeholders to negotiate. The program also emphasizes improved public dissemination of information about the peace process. These activities will consist of technical assistance sessions, advocacy campaigns, and information dissemination by radio, theater, etc.

IR 3 : Improved living conditions of the affected local population

The program might implement activities that will improve the life of the affected populations. Activities might include construction of local level community infrastructure consisting of:

- wells and latrines
- school classrooms
- health huts

These community based infrastructures will be built in tandem with peacebuilding activities such as community dialogues and reconciliation ceremonies.

2.0 COUNTRY AND ENVIRONMENTAL INFORMATION (BASELINE INFORMATION)

2.1. Locations affected

The program will be implemented through the two administrative regions of the Casamance with a focus on training activities in the major urban areas (Ziguinchor, Bignona, Sédhiou and Kolda). If small scale reconstruction activities are implemented, they will most likely be in the Ziguinchor, Oussouye, and Bignona and Sédhiou departments. The following provides a brief description of the biophysical and socio-economic aspects of Senegal.

a. Biophysical aspects

Senegal has a surface area of 196,722 km², which is mostly flat without any pronounced relief. A quarter of its territory is arid. As in much of West Africa, environmental degradation has placed intense strains on Senegal's agriculture and natural resources and threatens economic livelihoods. Once expansive forests are in danger of disappearing, which negatively affects rural incomes, biodiversity and stability.

Climate: Senegal has a harsh climate with generally high temperatures, and low to moderate rainfall. The rainy season is limited to a seasonal monsoon, wetter in the south than in the north. The average rainfall varies between 200 – 400 mm from July to September in the north, 400 – 700 mm in the center, and 700 – 1000 mm from May to October in the south. Variations in amounts and timing of annual rainfall cause fluctuations in productivity of the agricultural, livestock and forestry sectors and make food security an issue for most rural dwellers.

Water Resources: The availability of water to a great extent governs land use and conditions of health or existence among most rural populations living at the subsistence level, and also affects the condition of the Senegalese economy. Water supply in the country is erratic, dependent largely on rainfall that varies greatly in amount, distribution and frequency from year to year. Groundwater reserves are still relatively abundant.

Senegal has four major rivers: the Senegal, the Sine-Saloum, the Gambia and the Casamance. Because of low rainfall and high evaporation rates, there are practically no permanent surface bodies of significance except for the lake Lac de Guiers which is replenished by the floods of the Senegal river regulated by two dams. A general decrease in rainfall over the past 30 years has also affected the flood volumes of the main rivers. As a result, large areas previously occupied by mangroves near the mouths of the Sine-Saloum and Casamance rivers have been converted into salt ponds (*tannes*). This means less floodplain agriculture and rangelands, less water for fish breeding and production and decreased habitat for other aquatic animals.

Soils: The soils of Senegal range from dry sandy soils in the north, to tropical ferruginous soils in the central region, and to ferralitic soils in the south. Overall, soil fertility is low and soils are mostly fragile, making them highly susceptible to water and wind erosion. The soil texture of most fresh water river valleys tends to be high in clay and loam content. They are classified as "generally good soils", i.e., they do not have serious limitations and are able to produce good yields of suitable, climatically adapted crops. Most cultivated soils located in the Peanut Basin are "generally poor to moderate soils". These soils have one or more limitations that restrict their use, are usually of fairly low natural fertility, and generally give low to moderate yields of climatically

adapted crops under traditional systems of management.

Terrestrial Ecosystems: Senegal's natural landscape grades from the Sahelian grasslands of the north with their widely spaced brushes and trees, to rainforest in the southern lowlands and mangrove swamps in the Lower Casamance region. Senegal displays a typical Sahelian fauna and flora. The extreme dryness experienced by Senegalese ecosystems during the 8-month-long dry season affects biomass production and renders natural vegetation highly susceptible to bushfires. Approximately 40 percent of the country is burned each year, provoking the destruction of pasture, crops, forests and sometimes habitations.

Marine ecosystems: Senegal's coasts are very productive for pelagic fish species. Senegal's river estuaries and deltas serve also as important nurseries for coastal fish, shellfish and shrimp. However, the habitat that supports the fishing industry is being degraded and the stock is being overfished. Nursery grounds that are accessible to marine species in the Senegal River Delta are only 5% of what they used to be. Animals that rely on fish for food, such as endangered sea turtles, birds and dolphins, are also affected by the decrease in the fish populations.

b. Socio-economic context

The population of Senegal is growing at a relatively high rate of 2.6 percent per year, having increased from approximately 3.2 million at independence in 1960 to about 10 million currently. Over 60% of Senegal's population relies on agriculture for their livelihoods (17% are in fisheries) and another 20% depend on income from agricultural secondary markets. Agriculture and fisheries contribute only 12% of GDP but represent about 57% of exports, indicating that there is room for increased growth. The actual amount of suitable agricultural land is low (19%) so population density figures can be misleading. Actual population density in productive lands can reach over 300 people/hectare. Most of this suitable land is rain-fed agriculture, with only 1.5% under irrigation. Rain-fed agriculture remains a low investment, low yield activity and won't be able to contribute more significantly to GDP until private sector investments are increased, agriculture is further diversified, and new technologies adopted.

Senegal's rural population is also highly susceptible to droughts and other disruptions in agricultural production and therefore frequently at risk of food insecurity. During droughts or periods of poor cereal production, farmers migrate towards the ocean to take up fishing, adding additional strain on that resource. Fisheries supply 70% of the animal protein consumed in Senegal.¹ In 2002, the fishing industry contributed 2.3% to the GDP and about 12.5% of the GDP of the primary sector. The World Bank reports that Senegal's fisheries employ both directly and indirectly some 600,000 people, or about 17% of the country's active workforce. Within the last ten years, the amount of fish caught has been abundant with the largest total occurring in 1999 when 395,000 tons of fish were caught, of which 124,000 tons were exported. The commercial value of the export was over US \$300 million. Fish is the number one export with between a 25% and 30% representation of the country's total exports.² The exportation of fish has even surpassed that of the peanut industry.

¹ As stated in section 36 of "Republic of Senegal, Fishery Sector Strategy", June 14, 2005.

² As stated in section 31, 33 and 34 of "Republic of Senegal, Fishery Sector Strategy", June 14, 2005.

2.2. National Environmental Policies and Procedures

The policy environment for natural resource management and biodiversity conservation has improved over the last 10 years. Senegal now has a broad legal basis for environment and conservation, yet many of the laws are not yet fully applied and some contradictions remain. Senegal has signed and ratified all the Rio international conventions. With USAID funding, a National Environment Action Plan (NEAP) was completed in 1997 that lays the framework for cooperation among all ministries for environmental policy and dialogue. This resulted in the new Environment Code that was established in 2001. The NEAP was also followed by the National Plan to Fight Against Desertification to develop specific actions to combat desertification. A *Biodiversity Strategy* was adopted that lays out priority areas for biodiversity conservation. The Decentralization Code of 1996 has had considerable impact on how the environment is managed as it transferred jurisdiction for natural resource management to local governments. The Forestry Code, revised in 1998, set conditions for the transfer of forest management to local governments which included the development of forest management plans. A new Forestry Action Plan was developed in 2005 to improve implementation of the Forestry Code. The *Hunting Code* is currently being up-dated and will experiment with local management of the protected areas. This corpus of Ag/NRM-related legislation and policy guidelines is well conceived but has yet to be fully applied.

3.0 EVALUATION OF ISSUES WITH RESPECT TO ENVIRONMENTAL IMPACT POTENTIAL

No planned **activities under IR 1 and 2** are expected to have any adverse impact on the environment. The activities to be undertaken to achieve these results are exclusively information transfer, provision of technical assistance, peace and reconciliation talks, local conflict resolution workshops and capacity building with key stakeholders in the peace process. No additional environmental reviews are required for those activities as they do not affect the environment in any way. They meet the criteria for Categorical Exclusion under 22 CFR 216.2(c)(1)(i) and 216.2(c)(2)(i), (iii), (v), (viii), and (xiv). Implementation of these activities will be undertaken by NGOs/PVOs.

Activities under IR 3 will integrate a small scale construction and rehabilitation component in combination with peacebuilding activities. Construction and/or rehabilitation might include any or all of the following: school classrooms, health huts, community wells, and latrines. Because these structures are small in size, made mainly with local materials using local construction knowledge, the labor is supervised by a licensed professional, and it is done in collaboration with the community, the potential negative physical impact on the environment is minimal. The construction and rehabilitation of any individual structure will not exceed more than 10 000 sq. ft. A Negative Determination with Conditions as per 22 CFR 216.3 (a) (2) (iii) is recommended for these construction/rehabilitation activities which entail physical interventions. Where necessary, construction engineers will recommend a monitoring and evaluation plan plus mitigation measures be taken for any potential negative effects from the construction and rehabilitation before construction begins.

4.0 RECOMMENDED THRESHOLD DECISIONS & MITIGATION ACTIONS (INCLUDING MONITORING AND EVALUATION)

4.1 Recommended Threshold Decisions and Conditions

Based on the environmental review procedures and the discussion included within this IEE, This section focuses upon recommendations to reduce possible negative impacts of program activities.

Under **IR 1 : Improved long-term strategy for peace is implemented by the GOS and MFDC** a **Categorical Exclusion** is recommended for all activities involving SO-financed technical assistance for high level peace accord negotiations, local conflict resolution workshops, peace and reconciliation talks, local conflict resolution workshops and capacity building with key stakeholders. These activities do not have any physical interventions and no direct effects on the environment pursuant to 22 CFR 216.2(c)(1)(i). This categorical exclusion does not apply to education, technical assistance, or training if such include activities directly affecting the environment, such as construction of facilities, per 216.2(c)(2)(i), nor to studies, projects, or programs intended to develop the capability of recipient countries to engage in development planning when designed to result in activities directly affecting the environment, per 216.2(c)(2)(xiv).

Under **IR 2 :More effective participation by key stakeholders in the peace process** a **Categorical Exclusion** is recommended for activities involving technical assistance sessions, advocacy campaigns, and information dissemination by radio, theater, etc. These activities do not have any physical interventions and no direct effects on the environment pursuant to 22 CFR 216.2(c)(1)(i), (v).

Under **IR 3 : Improved living conditions of the affected local population** a **Negative Determination with Conditions** is recommended for the following possible activities, pursuant to 22CFR 216.3(a)(2)(iii): Small construction rehabilitation and construction activities consisting of one/two room school classrooms, health huts, community wells, and latrines. Because these structures are small in size, made mainly with local materials and using local knowledge, supervised by a licensed professional and conducted in collaboration with the community, the potential negative physical impact on the environment is minimal. For the construction of these facilities that include damaged housing, schools, clinics, latrines, and wells, the Mission SO team will ensure that the Guidelines attached to this IEE (Attachment 1) are properly followed and that the Environmental Guidelines for Small-Scale Activities in Africa (EGSSAA) are used throughout the construction phase. If construction exceeding 10,000 ft² is warranted a more detailed environmental assessment would be conducted.

Water and Sanitation conditions:

Both water supply and sanitation activities should be conducted in a manner consistent with the good design and implementation practices described in EGSSAA [*Chapter 16: Water Supply and Sanitation*](#). The SO Team and implementing partners should closely examine this chapter, as it provides a thorough discussion of program design and implementation issues that can help avoid numerous preventable problems. Another useful reference to consult for good water and sanitation design and implementation principles is the document, “Guidelines for the Development of Small Scale Rural Water Supply and Sanitation Projects in Ethiopia,” by

Catholic Relief Services and USAID, July 31, 2003.

Water quality testing is essential for determining that the water from a constructed water source is safe to drink and to determine a baseline so that any future degradation can be detected. Among the water quality tests which must be performed are tests for the presence of arsenic. Any USAID-supported activity engaged in the provision of potable water must adhere to Guidance Cable State 98 108651, which requires arsenic testing. That 1998 cable also anticipates “practical guidelines on sampling and testing for arsenic” that were then under development. The EGAT Bureau completed these guidelines, and the Africa Bureau has packaged them in a document titled, “[Guidelines for Determining the Arsenic Content of Ground Water in USAID-Sponsored Well Programs in Sub-Saharan Africa](#).” The SO team must assure that the standards and testing procedures described in this guideline document are followed for potable water supply activities under this program.

Monitoring:

As required by ADS 204.5.4, the SO14 Team and implementing partners will actively monitor and evaluate whether the environmental features designed for the activity are being implemented effectively. The SO Team shall also monitor the need for additional environmental review based on IEE recommendations. SO14, in collaboration with implementing partners, shall ensure that provisions of the IEE, including the conditions and monitoring set forth herein, are incorporated into all contracts, cooperative agreements, grants and sub-grants, as appropriate.

4.2 Mitigation, Monitoring and Evaluation

A preliminary performance monitoring plan has been prepared for the SO. To ensure that interventions are designed in a sound and sustainable manner, the team member and the program coordinator will work with the appropriate grantees to achieve compliance with these procedures. Each grantee will have well defined responsibilities for monitoring activities and providing on a periodic basis activity performance reports. The Mission’s program coordinator will have as one of her tasks the monitoring and reporting on the environmental implications of each activity. This includes soliciting and reviewing grantee reports on environmental mitigation and monitoring actions, and undertaking periodic examinations of the environmental impacts of activities and associated mitigation and monitoring activities.

The procedures are based upon the utilization of an environmental screening and reporting process consistent with the "Environmental Screening/Report Form for PVO/NGO Activities and Grant Proposals" contained in Africa Bureau "Environmental Guidelines for Small-Scale Activities in Africa". It will need to be tailored to suit the needs of USAID-supported activities under this SO. The Mission will facilitate the refinement of this form with the implementing partners to meet SO needs and to incorporate, where appropriate, information that serves to identify any need for environmental assessment in accordance to Senegal's environmental assessment policy and legislation. Adherence to the procedures in this IEE cannot be considered to substitute for Senegalese requirements or vice-versa. Efforts will be made to refine the screening form so as to dovetail respective assessment information requirements to the maximum extent allowable. This screening and review process will also integrate Mission and partners' experience in managing negative social Impact of activities on vulnerable groups and in managing conflicts.

Where appropriate, activities will be individually screened using the Screening Form, which utilizes a four-tier categorization process consistent with Africa Bureau's Environmental Guidelines, as defined below:

Category 1: Activity that would normally qualify for a categorical exclusion under Reg 16 (i.e. community awareness initiatives, training at any level, provision of technical assistance, controlled experimentation exclusively for the purpose of research and field evaluation which is confined to small areas and carefully monitored, etc.) Certain specifically defined, small-scale activities entailing rehabilitation of water points and construction or rehabilitation of facilities have also been placed under this category.

Category 2: Activities that would normally qualify for a negative determination under Reg. 16, based on the fact that the grantee used an environmentally-sound approach to the activity design and incorporated appropriate mitigation and monitoring procedures. For example, the design followed, and the manager has access to and will follow, a series of guidelines for the design of small-scale environmentally-sound activities in forestry, agriculture, natural resources-based enterprises, infrastructures, etc.

Category 3: Activities that have a clear potential for undesirable environmental impacts and typically under Reg 16 require an environmental assessment, such as those involving land development, planned resettlement, penetration road building, substantial pipe water supply and sewage construction, large-scale irrigation projects, and projects involving the procurement and/or use of pesticides. All activities listed in Reg 16 section 216.2(d)(1) are automatically included, unless they are small-scale and qualify for a negative determination in accordance with criteria listed under Category 2.

Category 4: This category groups activities that either USAID cannot fund or for which specific findings must be made in an environmental assessment prior to funding. Interventions which are likely to jeopardize a critical habitat for threatened or endangered species or degrade a protected area fall in this category. Category 4 includes activities that trigger provisions of sections 118 or 119 of the Foreign Assistance Act, which generally relate to degradation of national parks or protected areas, introduction of exotic species, or effects on tropical or integrated forest lands.

Guidelines for Small-Scale Development Activities

I. Types of Construction

A. Latrines

Community sanitation programs will be established at each primary school site where latrines are installed and, where feasible, in surrounding areas, to promote family latrine use. School officials will be trained as trainers to conduct training and other educational activities to stress the importance of hygiene and proper sanitation to good health and will advise the “ Association de Parents d’élèves” (APEs) on latrine placement in their own compound.

The Casamance SO and its grantees will, for the purpose of this activity, be familiar with established technical standards and specifications for the construction and siting of improved pit latrines, as formulated under low cost sanitation programs in other countries in Africa and specified in Attachment 2.

The Casamance SO grantees will have overall responsibility for the siting and construction of the latrines. Communities will actively participate in the construction of the latrines as well by providing labor and local building materials.

B. Rehabilitation and Construction of Water Points

The project will rehabilitate existing wells and establish new hand-dug wells where they are technically feasible and lack of water makes good hygiene difficult or impossible. It is assumed that each water point will be equipped with drainage system and a dry well.

In the course of activity implementation, Casamance SO grantee(s) will work with established technical standards and specifications for the construction of hand-dug wells and those for operation and maintenance.

Final water point site selection will be made in conjunction with the community leaders and school personnel. Communities will actively participate in all stages of well construction/rehabilitation.

The Casamance SO grantee(s) will train peri-urban and village community members the proper use and treatment of water (including the transport and storage of water), and the general relationship of water to health.

C. Classroom Rehabilitation/Construction

Casamance SO will rehabilitate or construct classrooms in schools that have inadequate facilities to the point that it discourages parents from sending their children, especially girls, to school.

II. Impacts and Mitigation

The following environmental issues will be addressed by the Casamance SO during implementation of the Casamance activities:

A. Water Point Rehabilitation and Construction

The extraction of groundwater from wells can cause well and aquifer pollution unless correct siting, construction, and usage procedures are adhered to. Consequently:

- a. All well siting will be the ultimate responsibility of the Casamance SO grantee(s). All wells will meet the siting requirements in terms of acceptable distance from latrine installations, proper drainage of excess water and other sources of possible groundwater contamination.
- b. All wells shall be constructed and/or rehabilitated based on established technical standards and specifications for siting, construction and usage. This will include proper sampling and analysis of water to assure safety of water supply (i.e., levels of boron, nitrate, conductivity, chloride, pH, etc.) and a determination of the maximum number of wells that a given aquifer can sustain based upon yield estimates if several wells are nearby. Where the rehabilitation process may require abandonment of the existing wells, abandonment shall be done in a manner that ensures non-pollution of the aquifer.
- c. All wells will be lined with concrete well rings to prevent possible contamination by parasites and disease-causing bacteria.
- d. All wells will be raised adequately above ground level to prevent contamination entering into the well shaft. The means of extraction will be devised to avoid contamination. A concrete apron will be constructed to ensure correct drainage of wastewater away from the well head and into a dry well to avoid standing water.
- e. All wells will be thoroughly disinfected after construction. Disinfection of wells shall be done in a manner that ensures no increase in pollutant concentration following the disinfection process.
- f. All well intervention will be accompanied by a community participation water and health education program through the APE.

Both water supply and sanitation activities should be conducted in a manner consistent with the good design and implementation practices described in *EGSSAA Chapter 16: Water Supply and Sanitation*. The SO Team and implementing partners should closely examine this chapter, as it provides a thorough discussion of program design and implementation issues that can help avoid numerous preventable problems. Another useful reference to consult for good water and sanitation design and implementation principles is the document, “Guidelines for the Development of Small Scale Rural Water Supply and Sanitation Projects in Ethiopia,” by Catholic Relief Services and USAID, July 31, 2003.

Water quality testing is essential for determining that the water from a constructed water source is safe to drink and to determine a baseline so that any future degradation can be detected. Among the water quality tests which must be performed are tests for the presence of arsenic. Any USAID-supported activity engaged in the provision of potable water must adhere to Guidance Cable State 98 108651, which requires arsenic testing. That 1998 cable also anticipates “practical guidelines on sampling and testing for arsenic” that were then under development. The EGAT Bureau completed these

guidelines, and the Africa Bureau has packaged them in a document titled, "[Guidelines for Determining the Arsenic Content of Ground Water in USAID-Sponsored Well Programs in Sub-Saharan Africa.](#)" The SO team must assure that the standards and testing procedures described in this guideline document are followed for potable water supply activities under this program.

B. Latrine Construction

Unless correctly sited, latrines can be responsible for well and aquifer pollution. Consequently:

- a. All latrine siting and construction will be the ultimate responsibility of the Casamance SO grantee(s).
- b. All improved latrine construction shall be done according to established standards and specification for construction and siting of improved latrines.
- c. In unstable ground, the latrine will be lined.
- d. Where existing latrines are close to a source of water such as a river or in areas of high water table, the latrine shall be moved to higher ground.
- e. All latrine intervention will be accompanied by a community participation personal hygiene and health education program through the APE.

C. Classroom Rehabilitation or Construction

Although the construction and rehabilitation of small-scale buildings is expected to be minor, adverse environmental effects from construction and construction material can occur. Consequently:

- a. The majority of materials used will be of local origin and will not contain any hazardous materials such as asbestos or formaldehyde. Excess construction material will be recycled wherever possible and disposal of unusable material will be done in an environmentally sound manner.
- b. Construction will not require the use of any heavy equipment, such as bulldozers or large cranes.
- c. If paint is used, empty cans will be disposed of in an environmentally safe manner away from areas where it can contaminate water sources.
- d. Areas of construction and/or rehabilitation will be controlled to minimize erosion. Any runoff from the construction site which may be high in suspended solids or which may cause disruption to local drainage patterns will be monitored closely by Casamance SO and will be immediately addressed.
- e. During the construction, measures will be taken to minimize standing water. If suppression of mosquitoes is found to be needed in standing water, soap will be added to the water to kill the larvae. No synthetic chemical pesticides will be used.

f. During the construction, measures will be taken to minimize dust and noise. Local village labor is expected to walk to the construction site and to use latrines already in the vicinity.

g. Care will be taken to improve the surroundings of schools where classrooms are being constructed or rehabilitated. Trees and grass will be planted and/or other measures taken that will add aesthetically to the renovation site while minimizing opportunities for destructive runoff and erosion.

III. Monitoring

A. Water Point Rehabilitation and Construction

The Casamance SO Staff, with input from local government organizations for rural water will have overall responsibility for monitoring ongoing water point rehabilitation and well construction progress. Samples of water from water points will be tested for water quality monitoring. Selected and trained community members and school staff will have the continued responsibility to monitor water quality and general well conditions after project completion.

B. Latrine Construction

The Casamance SO Staff has the responsibility for ongoing monitoring of the latrine construction phase. Selected and trained community members and school staff will have the continued responsibility to monitor the latrine status and maintenance after project completion.

IV. Evaluation Program

During the implementation of this program each well and latrine will be subject to local community and government staff approval and evaluation.

During the life of the activity, and as long thereafter as USAID continues to fund activities conducted by Casamance SO, USAID field staff will review any data collected by the concerned government departments, and assess it for possible changes in the characteristics of the water supply and sanitation interventions.

Environmental issues will be one of the key items addressed during any monitoring and evaluation. Also, USAID will closely monitor implementation and will utilize the recently published Africa Bureau "**Environmental Guidelines for Small Scale Activities in Africa**".

Technical Specifications for Casamance

(Note: additional specifications for housing, clinics, wells, and other small infrastructure will be provided by grantees and approved by Activity Engineer(s) – TP, Genie Rural or consultant – before construction begins)

Description of the construction work

The construction work includes:
One three classroom building for about 180 students.
One four latrine bloc.

Constructions layout:

The classroom building and the latrine bloc layout shall take into account the optimum sunlight, winds direction and other weather constraints. It shall also have a good fit into the existing school buildings setting with regard to their location, the location of existing trees and sanitation requirements.

Technical specifications:

A. The classroom building:

1) General description:

The building will be composed of the following components:
Foundations composed of 14 footings, 0.20x0.15m reinforced concrete girders and 20cmx20x40 solid agglomerated gravel blocks;
Walls made of 15cmx20x40 hollow blocks with 14 posts and 15x15cm girders;
Concrete floor;
Steel roof-frame;
Steel door and windows;
Corrugated aluminum sheet roofing;
Plywood ceiling with a steel frame.

2) Dimensions:

Classrooms shall meet the following requirements:
The area per student of 1 to 1.2 square-meters per student including teacher's space and free circulation area;
A maximum of 60 students per classroom.
Suggested dimensions for each classroom are the following:
Length: 9.00 meters,
Width: 7.00 meters,
Classroom area: 63.00 sq. meters.

Covered verandah: 1.70x9,20 meters for each classroom
Floor level shall be at least 0.45 meter above ground.

3) Doors and windows:

Metal doors and windows including frames will be installed.

All building components shall comply with engineering requirements. Shop drawings shall be submitted for Activity Engineer's approval.

B. The latrine

1) Description:

A sanitation bloc comprising four latrines similar to the Ventilated Improved Pit will be constructed. Latrines shall meet the following characteristics:
be ventilated,
be equipped with a fly screen over the top of the vent,
be equipped with a seat which is structurally stable and washable.

The basic components of a latrine are the following:
a two compartment pit which must be naturally stable;
a stable concrete pit cover with a seat and two drop holes to be used alternately for defecation (the hole of the unused pit compartment shall be close);
a vent pipe with a fly screen over the top and;
a roof superstructure over the drop holes.

While one of the latrine pit compartments is in use, the second one's sludge will be closed for two years to allow a complete decomposition of the sludge it contains. Such materials, sufficiently stable and free of health risk at end of this two years period, can be used as a soil fertilizer.

2) Technical specifications

The latrine block will be composed of four defecation rooms. Each room is connected to a two adjacent compartment pit. One pit compartment is used at a time.

The two-compartment latrine pit will be 1.5 meter long, 1.5 meter deep and 1 meter large. It will be cement block lined. A separation wall will make the two compartments. A 7 centimeters thick reinforced concrete slab with two-drop holes will cover the pit. In each room, two drop-holes will be created on the reinforced concrete slab. One of the drop holes will be equipped with a seat whilst the second will be closed and sealed.

The superstructure will be composed of a four walls cabin, a roof, a door and a PVC pit ventilation pipe. The cabin ventilation will be made of adequate cement openings.

The latrine bloc shall be properly located to avoid obstruction to the free flow of air across the rooms and the vent pipe.