

**USFS Support to Law Enforcement and Watershed Management in
Sierra Leone:
US Embassy Freetown – Public Diplomacy Program**

**Training of Law Enforcement Officers and Natural Resource Managers for the
Implementation of Natural Resource Protection and Watershed Principles in the
Western Peninsula Forest Reserve**

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SUMMARY

A three-member team of USDA Forest Service (USFS) employees concluded a two-week assessment and training workshop mission with law enforcement officers and natural resource management stakeholders in Sierra Leone at the request of US Embassy Freetown. The goal of the mission was to conduct a technical training on law enforcement and watershed management in the Western Peninsula Forest Reserve (WPFR). The integrity of this reserve is currently threatened by a number of factors, including the current rebuilding effort in Sierra Leone and related encroachment of human settlements into forested areas. The fragile legal system and lack of management capacity in government institutions are resulting in unregulated use of forest resources by the war-torn population. These local residents are attracted by readily accessible resources in the forest reserve, which represent a source of both income and food supply. The lack of effective policies and resources for the management of WPFR serves as an indicator of the urgent need to rebuilding a functional civil society for the people of Sierra Leone, as a preventive measure for post-war crisis or even a return to conflict due to mismanagement of natural resources.

To address these challenges and promote sustainable forest management in the WFPR and beyond, the USFS believes that a package of technical assistance, training, and management support could be developed and implemented in collaboration with the Government of Sierra Leone. To that end, the USFS is interested in promoting improved forest management and use of forest resources for economic development in Sierra Leone. USFS is on the ground in neighboring countries (Guinea, Liberia and Senegal) and any future USFS-led activities in forested areas of Sierra Leone will be integrated into our strategy for West Africa: *Transparent and sustainable forest management to promote economic development and regional stability via empowered communities and strengthened institutions*. The WFPR is a logical initial area of focus for USFS technical assistance. However, there is also compelling evidence that unsustainable forest resource use is occurring elsewhere, such as in the last remaining Lower Guinea Forests in the eastern region of Sierra Leone. This region was significantly affected by the civil war and local populations have few livelihood options, leading to unsustainable extraction of forest products. Further assessment will be needed to evaluate the possibility of any USFS-led forest management activities in this region.

While the needs are many in Sierra Leone, our experience in post-conflict nations and fragile states has demonstrated that to achieve reform and stronger institutions, technical assistance must be tightly focused on a few critical issues. As USFS technical assistance aims to promote improved governance of natural resources, economic growth, and sustainable use of natural resources, our focus will be to promote activities that will reinforce the governance and management capacity of Sierra Leonean forest management institutions, and promote legal access to forest resources by communities. These initial areas of focus are based on needs expressed via consultations with Sierra Leonean forest stakeholders as well as team observations during the mission, and are listed below:

- Forest and Natural Resource Policy Reform
- Institutional Capacity Building of Sierra Leone Forest Service

- WPFR Land Use Planning and Watershed Management
- Community Forest Management in and around WPFR

BACKGROUND

The fragile state of Freetown's WPFR is in many ways representative of Sierra Leone itself. A relatively small but vital patch of forest, the reserve covers some 17,000 hectares along a narrow chain of forested hills. Various catchments within the reserve supply water to Freetown and its outlying areas. Governance and application of laws in this area have been progressively weakened by events during and since the country's decade-long civil war.

Intense demographic change resulting from the conflict led to the influx of up to one million displaced people to the Freetown area. The breakdown in order after the 1999 rebel offensive on Freetown pushed many displaced people into the hills of the WPFR. Over time, many people came to rely not only on the forest to extract basic resources, such as firewood and bushmeat, but also for land on which to settle and farm.

The pressures of war, unplanned development, land clearing, encroachment and fuelwood extraction have dramatically accelerated deforestation in the forest reserve. Limited areas for growth around a densely settled urban area have pushed development into the steep slopes above Freetown area. Local sources claim that as much as 20-25% of the area's forest cover has been lost. The deforestation is not evenly distributed across the reserve, with the most significant and destructive forest loss near Freetown and on the slopes adjacent to coastal area communities. The interior of the reserve has been much less affected, perhaps due to limited road access. The reserve's biodiversity, which includes some 300 bird species and wild populations of chimpanzees, has also come under intense pressure. Academic sources estimate that up to 45% of native faunal species have been extirpated since the early 1990's. There is also a linkage between illegal resource collection and bushmeat hunting. Over 80% of Sierra Leoneans rely on fuelwood as primary energy source, and firewood collectors spend considerable amounts of time in the forest.¹ These collectors, along with armed poachers, often take game spontaneously when in forest areas, including monkeys, duikers and bushbuck from the reserve, exerting pressure on what are thought to be very small remaining mammal populations in core forest areas.

Perhaps the most alarming effects of increasing deforestation have been changes to the water catchment itself. As the water catchment forest cover shrinks, the inter-relationship of surface runoff, groundwater recharge and dry season water supplies has changed; this is particularly a concern where adequate water storage facilities do not exist. A study of the Bambara stream found that its water level has declined by one-third in just the past decade. Similarly, the Kongo Dam, for the first time in memory, dried up almost completely in Fall 2004.² Erosion from exposed slopes has become so severe that plumes of brown sediment are found in the ocean up to 20km south of Freetown. As a result of

¹Data gathered from conversation with the Ministry of Agriculture, Forest and Food Security.

²Information gathered from conversations with the Ministry of Agriculture, Forest and Food Security

this erosion, the Sierra Leone Ports Authority spends large sums of money to dredge coastal areas to keep the city's ports operational. The rapid pace of land clearing has overwhelmed local authorities and an already fragile legal system, making law enforcement difficult. And even if local forest guards and police officers were present in the reserve and were enforcing laws, the fines and measures stipulated by outdated forestry codes are so weak that they would not be a deterrent. Similarly, demarcation of the reserve area, unachieved to date, is a major challenge to effectively managing forest resources.

In response to the environmental challenges facing Sierra Leonean population in Freetown, the USFS conducted a two-week consultative and training mission at the request of the US Embassy Freetown. The request was initially prompted by the urban sprawl encroaching on the WPFR. However, once in country, the USFS team obtained information from local natural resource management and law enforcement officers suggesting that there are varying factors to the degradation of the WPFR, such as unregulated hunting, stone mining, fuelwood, medicinal and illegal timber harvesting.

The USFS International Programs Office promotes sustainable forest management and biodiversity conservation internationally, often via technical assistance and training for host-country counterparts. During this mission the USFS sought to provide the Sierra Leonean NRM stakeholder with targeted technical assistance (TA) to help achieve the goal of protecting the WPFR. Information on technical assistance needs was obtained in participatory dialogues and discussions between the field-based staff of the USFS and the Sierra Leoneans natural resource managers and law enforcement officers. Once the critical management issues and needs were identified, the USFS began to address them by providing recommendations for reforms and training programs. If adequate funding is identified, USFS will implement these recommendations by tapping into the agency's wide range of expertise and developing a program of technical assistance. This mission was funded by the US Embassy Freetown Public Diplomacy Program, USAID / EGAT/ Forestry Team and USDA Forest Service International Programs.

KEY POINTS, FINDINGS AND RECOMMENDATIONS

Sierra Leone faces the arduous task of balancing the immediate needs of the local people with the necessity of a broader, long-term vision of protection and sustainable use of these same forests. Sierra Leone's ability to achieve this balance will depend heavily on whether the country can successfully address natural resource management challenges, and there is a need to focus on community participation in NRM and legal reform. Currently, the nation's ability to manage and protect its natural resources is minimal and or non-existent. Additionally, there is a risk that if concrete actions are not taken in the short-term to address resource use needs, the general public will feel marginalized and neglected, which can result in conflict.

The U.S. Forest Service addressed two aspects of natural resource management, law enforcement and watershed management, during the mission to Sierra Leone from June 6-17, 2005. The team interviewed and met with over 45 people representing stakeholders working in the WPFR as well as other protected forest areas in Sierra Leone. The USFS team also conducted a workshop focused on hydrology, law enforcement and zoning of critical areas within WPFR. The following are the primary issues that surfaced regarding improved natural resource management, and the specific issues of legal reforms, law enforcement, community participation, institutional capacity building and management planning for forest reserves.

I. Natural Resource Management Policy Reforms

A. Current Forestry Statutes and Policies are Ineffective and Outdated.

Findings: The current statutes and their penalties for forest-related illegal activities are not commensurate with the economic value of the forest product by itself and/or the relationship of that forest product to the ecosystem. For example under the Forestry Regulations of 1989, Part VIII Offenses and Enforcement, Section 28 (1):

Any person who, without lawful authority in a national or community forest, ...damages a forest product or clears the land, builds a road or structure, or takes or cultivates is guilty of an offence punishable by a fine not exceeding 10,000 Leones (around \$3.50 U.S.) or imprisonment not exceeding 12 months or both.

Under this statute, a defendant could be fined the same amount whether the defendant took one tree or one thousand trees. If the removal of one thousand trees hurt the watershed and directly affected people's water supply, the fine would still be 10,000 Leones. Due to the ineffectiveness of these laws and policies, the Police and the Ministry of Agricultural, Forest and Food Security (MAFFS) who are the enforcers of these statutes, rarely enforce, prosecute and convict offenders.

Recommendations:

- Penalties for violation of Forestry laws should be increased and made commensurate with the crime. Changing these statutes will promote

governmental reform within various levels of enforcement (Community Leaders, Division of Forest Wildlife (DFW) and the Police), prosecution and judicial actions.

- By laws need to be established to ensure local interest and involvement. Discussions with community leaders indicated that they would be interested in local involvement in the protection of forest resources if there was some means to enforce forestry laws at the community level.

US Forest Service Support: The Forest Service has the technical expertise to evaluate environmental laws, both statutes and proposed by laws that would be commensurate with the illegal forest activity and effects of the activity on the ecosystem.

B. Unclear Jurisdictional Areas, Roles and Responsibilities

Findings: Enforcement officers and DFW lack adequate information about their roles and responsibilities in forest resources protection. Discussions with Police and DFW indicate that enforcement actions to prevent illegal removal of forest products are not implemented. In the rare case when an offender is arrested, the possibility that they will be convicted becomes less and less as they are transferred from the custody of forest guards to the police then to the judicial system. Higher levels of custody law enforcement have lesser awareness of forestry laws and penalties than forestry personnel. Eventually the offender is released with no charges or asked to pay a minimal fee for the offense. Therefore, police and forest guards are reluctant to engage and arrest offenders, and there is little direct motivation for them to perform such activities.

Recommendations:

Police and DFW personnel need clear direction and support for law enforcement regarding illegal forest use activities. This clarity, combined with training, will build the capacity of the Police Department, DFW, and other law enforcement partners. Key trainings to implement are listed below.

- Training for the Judicial and Legislative sections of government: Basic training on the impact of illegal forest activities, the environmental problems associated with lack of enforcement, and the potential benefits associated with improved law enforcement, need to be conducted within both judicial and legislative sections of government.
- Training for the Police Department: Police need a permanent natural resource offense curriculum within their police academy. In addition, they need advanced natural resource management training for “seasoned officers.” The police department has formed a partnership with the Conservation Society of Sierra Leone to train all new officers in environmental law enforcement. However, there is no mechanism to ensure “seasoned officers” receive advanced or updated natural resource offense training. MAFFS could, at no or very little cost provides instructors for a permanent natural resource offense section within the police academy. Advanced training could either be conducted by MAFFS, or other

qualified trainers. Those forestry agents with law enforcement powers could also benefit from participating in natural resource offense training.

US Forest Service Support: The Forest Service has the technical expertise to provide basic as well as advanced forestry law training to enforcement officers, the legislative and judicial branches of government.

II. Institutional Capacity Building of the Forestry Division

Findings: The Ministry of Agriculture, Forest and Food Security has limited resources, and is therefore unable to provide basic investigative and infrastructure equipment to Forestry and Wildlife personnel for forestry protection. Furthermore, there is limited enforcement capacity within the Sierra Leonean Forest Service and its partners. With a total of only three-hundred employees, coupled with limited training and resources, DFW often finds itself in compromising situations where forest guards are outnumbered by lawbreakers and therefore unable to prevent illegal activities. Additionally, Sierra Leone lacks the benefit of a forestry training school. The Director of Forestry in Sierra Leone expressed the need to establish a technical school of forestry in Sierra Leone that would address topics such as inventory methods, silviculture, tree planting, harvest methods, wildlife, database management and Geographical Information System (GIS), among many other topics.

Recommendations:

- Basic investigative and infrastructure equipment needs to be acquired by the Forestry and Wildlife personnel. This will support the development of capacity within the division, and may help create other positive reforms. Minimal funds need to be secured for basic equipment to ensure that the division staffs have the necessary tools for both field and office tasks.
- Recruitment and training of new forest guards. Staffing the DFW will reinforce its human capacity as well as create employment for the youth of Sierra Leone. Educated but unemployed youth can serve as the pool from which new forestry guards are selected. This activity which needs to be initiated by the Sierra Leonean government and would serve as a component of President Kabba's plan to create a separate Ministry for Forest Management and Environmental Protection.
- Training Course for DFW staff: Development of forest inventory methods, silvicultural techniques, nursery management, and logging systems short course in Sierra Leone lasting one to two weeks will increase the skill level significantly within the DFW forest management staff. Also, short courses in the United States that would last a minimum of two weeks in which selected Sierra Leonean DFW staff and law enforcement officers could participate as part of a study-tour mission. These short-term technical training courses could serve as the foundation for the establishment of a technical forestry school in Sierra Leone.
- Revamping DFW Human Resource Department. At present the DFW is loosely structured and can use assistance in organizing and defining the role of its staff, from the management level down to the field agents. Ideally, the DFW would be

organized into a streamlined, service-oriented agency, with certain tasks retained by the government, such as law enforcement, and other forest management tasks delegated to communities and the private sector.

US Forest Service Support: The USFS, with its expertise in building partnerships with in-country forest management agencies as well as other stakeholders, can provide technical training related to law enforcement, human resources reform programs, and institutional reorganization. Additionally, the USFS could help provide the necessary tools to strengthen the authority of Sierra Leonean forest service in managing the country's forest resources. Finally, the USFS could support President Kabba's plan to create a separate forestry ministry by providing guidance about how this ministry should be organized and what tasks it should assume.

III. Western Peninsula Forest Reserve Land Planning and Watershed Management

A. Land Use Planning

Findings: Within the WPFR there is very little active natural resource management. It is unclear as to whether this is due to current policy, a resource issue, or a result of the enabling legislation for the creation of WPFR. There does appear to be an opportunity to allow some activities that are now occurring illegally to be authorized and managed. This multiple-use approach would establish management zones for protection of key areas, and also provide some resource management opportunities for local communities. However, there have been no signs of any completed strategic land use planning efforts in and around the WPFR to date. Therefore, this approach would require outside technical training, guidance and implementation.

The actual boundary of the WPFR is not adequately marked and consequently its location is not precisely known, even by local users. However, the Reserve is officially recognized as protected and managed by the government, and there are out-dated regulations concerning the use of resources within the reserve. During the workshop, participants divided into four teams, identified specific core areas within the Western Peninsula Forest Reserve where resource use or protection is critical and emphasis would be placed on enforcement of the existing laws (Appendix A and Figure 1). It was generally agreed on that outside the conservation buffer area, land might be utilized for many purposes: agro-forestry, wood lots, nurseries, or other uses to ensure that local populations had economic means, and therefore would reduce use of the core protected zone.

USFS team also learned that there are discussions about the potential for developing commercial forestry, mining etc. within the WPFR. The timing and the partners involved are yet to be announced. However, should these activities

occur, they will have a socio-economic effect on Freetown and potentially the surrounding districts, as well as an ecological impact on the WFPR

Recommendations:

- Land use zoning and planning in and around the Forest Reserve can be an asset in promoting protection. Land use planning processes of core protected areas, that would delimit core protected areas, buffers and multiple use areas should be initiated and implemented in and adjacent to the WFPR. This will create additional economic means for the local communities and in the long term protect the most critical core areas of the reserve.
- Demarcation of current boundaries of the WPFR is critical with signs or posts made visible to deter further encroachment. Partnerships could be explored in which local NGOs or volunteers assist in order to expedite the process of ground-truthing and marking off reserve boundaries.
- Identify areas where flood hazard is high or erosion sources and adopt appropriate land use codes that would either prevent further development or require preservation of forest cover into developed areas and plan for the routing of storm water.
- Commercial Forestry/ Mining in the WPFR:
 - Planned commercial activities (timber, mining etc.) should include an environmental impact statement.
 - Planned commercial activities/companies should be held accountable for an economic resource analysis. This should include
 1. Upfront bonds (money) for potential environmental damage;
 2. A Plan for returning the environment back to its natural state (similar to how it was prior to the exploitation);
 3. Involvement with local communities for employment, and environmental protection.
 - Planned commercial companies should give a percentage of their profits back to the local communities and/or environmental protection funds (or the Division of Forestry etc.)

B. Watershed Management

- **Findings:** Reduction of water holding capacity and increased rates of runoff caused by vegetative type conversion from mature forest to grass/shrub or bare ground on steep lands above populated areas have increased flooding, sediment and debris flows into densely populated areas. This is the most important environmental concern currently in some areas within the WFPR, and without question it is already having a major detrimental effect on life and property. In other areas within the Western Area Peninsula the deforestation associated with expansion of slash and burn agricultural practices and extraction of wood products is of larger concern.

The catchment supplying water to the Guma reservoir was studied in detail as it is the single largest facility developed for the purpose of supplying water to the

Freetown area. Based upon the evidence made available during the assessment it does not appear that deforestation has had a significant negative impact to water supplies for the facility as of yet. However, other smaller facilities managed by the Guma Valley Water Co. have been abandoned either due to increasing human habitation that has seriously compromised water quality or increased incidence of damaging runoff events that impact facilities used to capture and transmit the water. The diminishing supplies of water in the Guma reservoir are less likely related to reductions in runoff and groundwater, and more likely related to insufficient storage and treatment capacity of a system designed and built for the needs of fewer customers than now exist. Additionally water losses in the distribution system, caused by leaks and vandalism are compounding the problem.

Recommendations:

- In those areas where significant deforestation has already occurred, institute programs or requirements to restore the forest and ground cover to the extent possible. This would be an important step in restoring the healthy hydrologic function of these steep headwater areas by increasing infiltration, reducing erosion rates and absorbing heavy rainfall that is now contributing to serious flood damage. Use of native species, although not always feasible, is certainly desirable as there are many ecological benefits associated with their occupancy such as medicine and food/fuel sources for the population.
- A comprehensive assessment of watershed attributes and forest cover across the entire WPCR would be helpful in the future planning for smart growth, flood hazard and water supply needs. This could be cooperatively done with forestry and hydrological research efforts underway in the reserve, conducted by neighboring Fourah Bay College.
- Development of a more extensive hydrology and watershed science short course lasting one to two weeks could increase the skill levels significantly within the DFW. The course would expand upon what was presented at this workshop to include the following topics:
 - flood calculation and hazard;
 - wetland and riparian area management;
 - watershed inventory;
 - restoration needs assessment and techniques;
 - water quality assessment and protection;
- Development of simple training/education brochures to educate citizens on the importance of watershed management and forest protection. General education efforts appear to be underway, spearheaded by a number of NGOs and this could be done in concert with those efforts. In the US, many primary schools participate in community water festivals which are important events to promote watershed conservation.

US Forest Service Support: USFS has significant experience in developing and implementing management plans for protected forest areas, and could help initiate this

process in Sierra Leone. The USFS has additional expertise regarding boundary marking, surveying, and satellite imagery that is supportive to boundary demarcation. The agency could help design and deliver the aforementioned training courses and educational information, as we have extensive experience in these areas. Finally, the USFS has expertise in community participation in multiple-use landscape planning/restoration and contracting of commercial forestry and mining areas.

IV. Community Forest Management

Findings: Sierra Leone, as a result of civil war, has shown minimal economic or social development over the last 10 years and has yet to implement alternatives to subsistence-based livelihoods. A significant percentage of its population use forest products unsustainably, clear forest lands for agriculture, or create urban sprawl within the protected forests areas. For example, over 80% of Sierra Leoneans rely on fuelwood for cooking. As a result of the civil-war, unemployment among the youth is at it highest in recent memory, and the youth are often involved in illegal forest activities for economic benefits. Organizing and training youth in legal alternatives to forest exploitation, coupled with conservation ethics, can promote long-term sustainable use, and stability of Sierra Leone's natural resources. Alternative forest use schemes that generate revenue, such as agro-forestry, controlled sustainable logging, tree nursery development; community woodlots and eco-tourism can be developed if appropriate technical assistance is obtained. In other post-war countries, community forestry has unquestionably served as a key component for reinforcing good governance and democratic decision-making processes at the local community level, not to mention the skills developed from joint management of common resources and sharing of benefits.

Recommendations:

- Policies or programs to enable community forest management need to be established. One effective method for the transfer of management authority to communities is via community associations that are legally recognized and empowered to manage forests. Effort should be made by the DFW to organize community members into officially recognized community forest associations. Because the land in the Western Area Peninsula is now government owned and managed, the Government of Sierra Leone would need to develop policy to enable community co-management of natural resources. The USFS team recommends that village-level association, with official recognition, take on the co-management tasks and interact with the DFW to develop transfer of certain responsibilities in the management contracts. Members of the associations would be chosen by community members and should aim to include youth and women. It would be worthwhile having forest guards as members of the associations. The community forest associations would work alongside DFW forest guards. They would also stay abreast of regulations pertaining to protected areas and meet regularly for training and decision-making. In short, the associations would serve as the liaison for effective collaboration between the DFW and local communities.
- Allocation of agro-forestry plots according to a land-use management plan for community use. Economic incentives for community members to participate in

forest resource protection are a critical part of the process. Communities can gain economic benefits through agricultural productions on assigned plots in or on the periphery of the forest reserve. Agricultural products such as fruit, spices, cocoa and coffee all have been successfully incorporated into agro-forestry efforts in West Africa.

- Fuelwood alternatives must be found to reduce pressure on native forest in the reserve. Efforts should be made to institute a program of planting and harvesting fast-growing tree species for fuelwood. Tree planting in and around the reserve could be done by student or youth groups with modest amount of funds for stipends and seedling nurseries. It will be necessary, however, to understand local land tenure arrangements so that community land ownership (for plantation sites) is a realistic objective.

US Forest Service Support: Technical assistance from the USFS can facilitate the design of forest management plans that are inclusive of the needs of local community members, respectful of Sierra Leonean law, and inclusive of sound forest management principals. USFS has extensive experience in developing and implementing community forest management methodologies in Senegal, Madagascar and Democratic Republic of Congo. Further studies of land tenure and community dynamics will need to be conducted in order to pursue development of the legal and management context that will be the framework for these activities.

USFS FUTURE SUPPORT TO NATURAL RESOURCE MANAGEMENT IN SIERRA LEONE

Any future USFS NRM activities in Sierra Leone would focus on supporting community participation in forest management, primarily because these activities will contribute to rebuilding an effective civil society from the ground up. In a post-conflict fragile state such as Sierra Leone the rebuilding effort must be inclusive of local populations. The effort to restore good governance, encourage reforms, improve security, strengthen civil society and build the capacity of institutions can all be addressed in natural resource management as indicated in the USFS recommendations for future work in Sierra Leone. If community needs are not acknowledged in development and resource management effort, a return to conflict is likely: a recent study by World Bank found that around half of all civil wars are due to a breakdown of peace during the first post-conflict decade, generally because combatants obtain revenue from the extraction of natural resources.³ Often, countries risk a return to conflict over disputes on resource control.

The submission of this report demonstrates the capacity and willingness of USFS to continue to provide technical assistance to the Division of Forest and Wildlife and law enforcement officers of Sierra Leone to protect the Western Peninsular Forest Reserve and explore options for developing economic livelihood strategies through community participation in protected area and natural resource management. Specifically, for institutional strengthening, the USFS proposes building the capacity of WFD and the Sierra Leonean Police to manage forestry activities through legal reforms, acquisition of equipment and technical trainings. A final goal of this support would be to develop protected area / forest land-use management plans that allow for community participation in NRM. It is intended that this effort will create the mechanism by which Sierra Leonean natural resource managers and law enforcement officers can effectively collaborate with local communities to manage the resources of the WPFR. Ultimately, policy changes will allow local communities to have a sense of ownership and the opportunity to participate in the decision-making process for the resources that they rely on for their livelihood.

However, USFS does not currently possess adequate funding to implement these activities on our own; we would need additional financial support from the State Department in Sierra Leone or USAID to help offset travel costs of USFS experts during their missions to Sierra Leone. Among the 35,000 USFS employees, many of which have international experience, specialists in resource planning, management, and law enforcement can be selected to assist in technical training, workshops, and institutional strengthening. The USFS also has significant expertise working in post-conflict nations. For example, in neighboring Liberia, USFS is one of State Department and USAID's implementing partners for the development of sustainable techniques and guidelines in forest resources management and rebuilding of the Forestry Development Authority of Liberia. Priority activities include capacity building for the Liberian forestry staffs and

³ Collier, Paul and Anke Hoeffler, 2004. *The Challenges of Reducing the Global Incidence of Civil War*. Copenhagen Consensus Challenge Paper. http://www.copenhagenconsensus.com/Files/Filer/CC/Papers/Conflict_23404.pdf.

promoting law enforcement in the natural resource sector through training. Having this broad range of available skills and extensive involvement in natural resource management in the sub-region makes USFS a viable partner to DFW that can promote improved law enforcement and natural resource management. The USFS will consult with the State Department Regional Environmental Officer for West and Central Africa and USAID/Sierra Leone to determine whether there is continued State Department or USAID/Sierra Leone interest in pursuing this type of partnership.

CONCLUSIONS

The priority for the Western Peninsula Forest Reserve is clearly preservation of the forest and the environmental services it provides, rather than commodity production. However, elsewhere in the country the wise use of forest resources could contribute significantly to economic growth and stability, and prevent a return to conflict. To achieve improved forest management, the Sierra Leonean Government needs to support the necessary resource planning as well as an investment in natural resource staffing that are critically important for the protection and management of forest resources. The USFS has the ability to provide technical assistance for natural resources management, with a particular focus on law enforcement and water use to meet the perceived immediate needs in Sierra Leone. If technical assistance program is feasible, the USFS will also address legal reforms, institutional capacity building, community forest management and improved application of laws in forested areas. The US Forest Service recognizes the potential of well-managed forests for Sierra Leone and hopes to support the US Embassy Freetown, USAID/Sierra Leone and Sierra Leonean government institutions in the effort to rebuild a functional and effective forest management sector.

Appendix A

Summary of Law Enforcement and Hydrology Workshop June 13-16, 2005

The United States Embassy invited approximately 35 people from Ministries and their Divisions, Parliamentary Members, Universities and Colleges, the Police Department, Conservation non government organizations, Head women and Councilors from local communities, Youth organizations and the Water Company to participate in a law enforcement and hydrology workshop focused on the protection of the WPRF

Participants were instructed in basic natural resource law enforcement procedures, as well as important hydrologic processes and functions in forest environments. In addition, participants were taken on a field trip where these principals were discussed and applied. The students were then challenged with three tasks which when completed were presented by break out groups as to findings and recommendations.

Workshop Findings and Recommendations:

Identification of critical areas, for protection and or conservation, within the Western Peninsula Reserve:

Findings: The groups identified critical watersheds for water supply, both current and planned, flood source areas, endangered species as well as biodiversity habitat, and scenic or unique areas as their top priorities (See Figure 1). Some of these critical areas were connected by corridor areas to ensure migration routes and reduction of the “island effect”. These areas were then surrounded by buffer areas to ensure protection of the core critical area. The list of values associated with specific areas includes: areas that either were currently providing domestic water or where additional sources may be developed in the future; steep slopes above densely populated areas that were either current contributing to flooding hazard or if developed would contribute; areas providing critical habitat for animal and plant species; finally those areas that were scenic and could contribute to an eco-tourism industry.

Enforcement procedures for critical areas: These procedures were broken into four levels of responsibilities: 1.) Community, 2.) Ministry of Agriculture, Forestry and Food Security (Forestry and Wildlife Divisions), 3.) Police and four Higher Government

Community Responsibilities:

- Extensive sensitization/awareness training regarding the protection of the WPR.
- Work to establish bye-laws which are in harmony with Forestry and Wildlife laws.
- Elect community forest task force
- Establish community nursery that would be run by the community

Forestry and Wildlife Division (Ministry of Agriculture, Forestry and Food Security)
Responsibilities:

- Establish a clear boundary around the WPR (survey, remark, posts or signs).
- Update Forestry and Wildlife laws
- Mass educational awareness on Forestry and Wildlife laws
- Reforest heavily degraded areas using indigenous species.
- Upgrade training/equipment
- Organize joint patrols (within Forestry and Wildlife Division, community, and Police)
- Provide incentives for effective monitoring/protection of WPR (equipment upgrades, promotions, awards etc.)

Police Responsibilities:

- Enforce laws, provide security with view to prosecute
- Establish natural resource protection unit within police force
- Permanent training program regarding resource issues within police academy
- Advanced training
- Need basic equipment to do enforcement
- Joint patrols with view to prosecute

Higher Government Responsibilities:

- Sensitize Legislative, Executive and Judicial branches of government for the need of Resource Protection
- Update laws: Need for tougher laws as current laws are weak and are not a deterrent to crime. Penalties need to be commensurate with economic value and ecosystem value of crime. New laws need to be in harmony with Forest laws, Guma Valley Act and local bye-laws.
- Establish new Ministry: Ministry of Forestry, Wildlife and the environment.
- Upgrade the WPR to park status.
- Establish a special court or community court to deal exclusively with Forest offenses.
- Support communities to engage in other income generating activities to reduce illegal activities on the WPR.

Identify short term activities that could be implemented by Sierra Leone within 1-2 years to help protect the WPR.

Findings:

- Remark boundaries around the WPR
- Increase the capacity of Forestry and Wildlife Divisions and other stake holders.

- Replant heavily degraded areas
- Education and awareness of need for and reason why for the WPR targeting local communities and youth.
- Review, harmonize and update policies, laws and community bye-laws related to resource protection.
- Establish good agro forestry practices.
- Establish community wood lots (nursery and plantation) and farm settlement schemes.
- Erect billboards and sign posts.

Recommendations:

The group identified 3 short-term and 1 medium to long-term recommendations that could be implemented within a 1-2 year period by Sierra Leone.

Short Term Activities

1. President declares a national symbol of conservation (chimpanzee, frog, tree or other).
2. Presidential Manifesto regarding halting deforestation within the WPR.
3. Advertisement campaign through music regarding water, endangered species and protection of the forests.

Medium to Long Term Activity

1. Establish “Ambassador Hull Trust Fund” for protection of the WPR. This would be an international fund that would be tax deductible and attractive to Sierra Leone people as well as International donors interested in conservation.

Additional Training Needs

The group identified the following training needs

- Land use planning
 - Communication equipment
 - GIS satellite imagery
 - Surveying
 - Weather observation equipment training (with the equipment)
 - Additional training in resource law enforcement
 - Guidelines in natural resource law enforcement policies/manuals
- Full time Forest Service employee stationed within Sierra Leone for 1+ year

Appendix B

U.S. Forest Service Team Recommended Talking Points for Ambassador Hull

Getting the message out to the people:

- Proclamation by President against environmental crimes.
- Establish National Symbol: Endangered species (chimpanzee, frog or tree). Symbol could be used in advertisement campaign and youth activities that would educate and highlight environmental issues.

Enforcement Recommendations:

- Upgrade and toughen forestry and wildlife laws to be commensurate with the crime. Penalties are outdated and need to be stronger to ensure “enforcement interest” within judicial system. Upgraded and new laws should be established in a tiered system so that enforcement could be accomplished at three levels: Police, Forestry and Wildlife Department and at the community chancellor level.
- Establish specialized environmental unit within Police Department: STEP (Sierra Leone Tactical Enforcement Unit). This will ensure some interest and connection with resource crimes.
- Establish permanent environmental training section within Police Academy. Police need additional education in resource crimes.
- Establish clear boundary around Western Peninsula Reserve.
- Upgrade Forestry and Wildlife Departments: Are virtually ineffective due to staffing levels/equipment.

Watershed Management Issues:

Findings: Population growth coupled with urbanization expansion into environmentally sensitive lands represent significant threats to forest ecosystems and local communities. Reduction of water holding capacity and increase rates of runoff caused by vegetative type conversion from mature forest to grass/shrub or bare ground on steep lands above populated areas has increased flooding, sediment production and debris flows into densely populated areas. This situation represents the paramount concern observed, as it without question it is already having a major detrimental effect on life and property. On other areas within the western peninsula the deforestation associated with expansion of slash and burn agricultural practices and extraction of wood products is the larger concern.

The catchment supplying water to the Guma reservoir was looked at in detail as it represents the single largest facility developed for the purpose of supplying water to the Freetown area. Based upon the evidence made available during the brief assessment it does not appear that deforestation has had a significant negative impact to water supplies for that facility. Other smaller facilities managed by the Guma Valley Water Co. have had to be abandoned either due to increasing human habitation that has seriously

compromised water quality or increased incidence of damaging runoff events that impact facilities used to capture and transmit the water. The storages that are becoming a major concern are most likely due to the insufficient capacity of the water collection and treatment system to provide for expanding demand. Additionally water losses in the distribution system, caused by leaks and vandalism are compounding the problem.

Recommendations:

- Identification of areas where flood hazard is high and adopt appropriate land use codes that would either prevent further development or require preservation of forest cover into developed areas and plan for the routing of storm water.
- In those areas where damaging development has already occurred institute requirement or incentives to recover the forest and ground cover to the extent possible. Some downstream actions may be necessary to more effectively route floodwaters and relocation of structures in high hazard areas may be warranted.
- Find ways to provide for production of basic human needs (food and energy) in areas less environmentally sensitive. Except for the perimeter of the peninsula, lands which could be intensively managed for wood products and food production are limited by terrain features; however there does appear to be some opportunities. This is critical so that pressure for additional development subsequent degradation of the steep and sensitive lands within the Forest Reserve can be alleviated.
- A comprehensive assessment of water resources and forest cover across the entire peninsula would be very helpful in the future planning for smart growth, flood hazard and water supply needs. This could be cooperatively done with some of the work already underway at Fourah Bay College.
- Development of simple training/education brochures intended to educate citizens on the importance of watershed management as it relates to water supplies, water quality and flood control. Education efforts appear to be underway, spearheaded by a number of NGO's and this could be done in concert with those efforts. For instance many primary schools in the United States participate in community water festivals.
- Good basic data regarding water resources seems to be lacking. Some of this could be addressed under the assessment recommendation. But increased capacity to gather and analyze more long term climatic and stream-flow data would allow more scientific analysis of changes which are believed to be occurring and would also be critical for water planning. The priority for initiating an effort like this could be in the Guma Catchment, where the director of the water company recognizes the benefits of access to more data that could positively influence the management of that facility.

Appendix C

Scope of Work

USFS Support to Law Enforcement and Watershed Management in Sierra Leone: US Embassy Freetown – Public Diplomacy Program Training of Law Enforcement Officers for the execution of watershed laws in the Western Peninsula Reserve

Background

Extensive pressure is currently placed on Freetown's natural resources as the rebuilding process begun at the end of a 10-year civil war attracts a large population of Sierra Leonean and expatriates to the city. The Western Peninsula Forest Reserve is located along a narrow chain of hills of 17,600 hectares on the Freetown Peninsula. The Reserve is approximately 37km long and 14km wide and contains the last remaining patch of tropical rainforest in west Sierra Leone. This closed-canopy, lowland evergreen forest, with patchy laterite plains covered with natural grassland contains significant wildlife including chimpanzees, 314 species of birds among which are five species of global conservation concern. A key source of water to Freetown's 800,000 residents, the Reserve contains two major reservoirs fed by several small streams, some of which have dried-out during the dry season in recent years, creating a significant drop in the water supply for Freetown. The interior hills of the Reserve have remained mostly untouched but increasing population encroachment for hunting, timber felling and firewood collection which are major income-generating activities, is unregulated and is steadily depleting the Reserves resources. Another area of concern is the deposit of silt sediments in the mangroves and coastal waters around the peninsula from increased erosion. This poses a significant threat to artisanal fisheries which is major economic activity, providing a livelihood for approximately 30,000 fishermen.

The USDA Forest Service International Programs (USFS/IP) promotes sustainable forest management and biodiversity conservation internationally. By linking the skills of field-based staff of the USDA Forest Service with partners overseas, the Agency can address the most critical forestry issues and concerns. International Programs regularly taps into the agency's wide range of expertise. Since international cooperation is necessary to sustain the ecological and commercial viability of global forest resources and to conserve biodiversity, most of our work is done in collaboration with other organizations.

The increasing growth of Sierra Leone's attention to and interest in local environmental issues is shown by the number of NGO activities, the creation of new laws and policies to regulate environmental activities, and the increase of law enforcement officers working with communities to execute these laws. Based on the current state of natural resource management in Sierra Leone USFS/IP believes that our agency can make a valuable contribution to NRM partners in Sierra Leone. USFS/IP has significant expertise in Africa on numerous forest watershed management issues, and hopes to work with Sierra Leonean partners to promote sustainable use of forest and watershed resources in the Western Peninsula Forest Reserve.

Goal

The USFS/IP will conduct a one-week law-enforcement and watershed management workshop in Freetown at the request of the US Embassy in Sierra Leone during the week of June 13, 2005. The focus of the workshop will be to train law enforcement officers, educators and NGO's working for the protection of the Western Peninsular Forest Reserve, in effective method of community relations, law enforcement techniques and Reserve boundary delimitation. This week-long training activity will be preceded by a week of preparation in Sierra Leone, during which the team of USFS experts will meet with Sierra Leone officials, US government officials, NGOs, and others.

Activities

- A 2-3 person USFS team will be in Sierra Leone from June 5-June19, 2005.
- The USFS team will spend the first week of the mission meeting with key partners, actively involved in the protection of the Western Peninsula Forest Reserve, as well as other important stakeholders. These meetings will aim at understanding the realities facing the Freetown population who rely on the Reserve for economic livelihood, the strengths and weaknesses of existing law enforcement and natural resource management agencies, and opportunities for improved law enforcement and implementation of regulations. Partners will include NGO's, environmental educators, University of Freetown, USG, community groups and Sierra Leonean police authorities.
- The second week of the mission will focus on the training workshop for partners.
- The USFS/IP team will include:
 1. Blessing Asuquo, the Africa Program Specialist at USFS/IP will serve as team leader (To be Determined, pending availability of funding)
 2. A law enforcement officer who has knowledge in watershed and/or wildlife management
 3. A watershed management specialist with experience in resource conflict issues

Output

The USFS team is expected to make recommendation to the US Embassy Freetown on future activities to continue developing the capacity of Sierra Leonean law enforcement officers, NGO's and University staff for building community awareness and participation in the protection of the Western Peninsula Forest Reserve. There is also a remote possibility that a proposal will be submitted to US State Department/Africa Bureau for Economic Support Funds to support follow-on activities.

Deliverables

1. Train local government officials in improved law enforcement practices and general principals of watershed management
2. Write a report detailing results of the training activity, additional training and technical assistance needs, opportunities for policy reform, and next steps

Timing: This detail should occur in June 2005.

Funding: All costs incurred during this detail will be covered by USFS / IP and State Department Public Diplomacy Funds.

Logistics: All logistics will be coordinated by the USFS/IP Africa Program Specialist.

Appendix D

USDA Forest Service Workshop on Law Enforcement and Watershed Management of the Western Peninsula Forest Reserve US Embassy Freetown, Sierra Leone; June 13-16, 2005

Monday, June 13, 2005

- 10:30 – 11:00 Welcome and Opening remarks by USFS team leader, Blessing Asuquo
Introduction of Forest Service Team
- 11:00 – 2:00 Self- Introduction by Participants
Logistics details – Abdul
Agenda Review and Workshop Objectives – Matthews
History of the Forest Service and Watershed Science
Important Hydrologic Processes and Functions in Forest Environment
Catchments and Stream Networks / Rainfall and Runoff
- 2:00 – 3:00 Lunch Break
- 3:00 – 4:30 Welcome remarks by US Ambassador Hull
Influence of Ground Disturbance and Deforestation
Best Management Practices / Processes and Functions
- 4:30 – 5:00 Questions and Discussion

Tuesday, June 14, 2005

- 8:30 – 9:00 USFS teams submits a Concept Paper to Christine Sheckler of USAID
- 9:00 – 9:30 Overview of existing laws governing Forest Reserves in Sierra Leone
- 9:30 – 10:00 Overview of US Forest Service law enforcement program
- 10:30 – 11:00 Natural Resources Enforcement Issues: Sierra Leone
- 11:00 – 12:15 General Tactics for Resource Protection
- 12:15 – 1:00 Lunch Break; Blessing Asuquo departs for Hovercraft
- 1:00 – 1:30 Break-out groups: explanation of assignment
- 1:30 – 2:30 Identification of Critical Areas within the Western Peninsula Reserve
- 2:30 – 3:30 Enforcement Procedures for Critical Areas
- 3:30 – 4:30 Short-term Activity: Implemented by Sierra Leone to help protect the Western Peninsula Reserve

Wednesday, June 15, 2005

- 9:00 – 4:00 Meet at US Embassy compound to travel to Guma Catchment
Investigate areas impacted by clearing or logging
Look for evidence of watershed impacts on slopes or drainage channels
Contrast conditions with well protected sites
Law enforcement tactics in the forest
- 4:00 – 5:00 Return to Freetown

Thursday, June 16, 2005

- 8:00 – 9:00 Completion of group assignments
- 9:00 – 11:00 Reporting-out to the larger group for feedback
- 11:00 – 12:00 Summary / Closing Remarks

Appendix E

Itinerary for US Forest Service Team: Sierra Leone Mission June 6-17, 2005

Monday, 6th June, 2005

- 1625 Asuquo, Matthews, Almy arrive on SN207
- 1900 Dinner at Mamba Point

Tuesday, 7th June, 2005

- 0730 Depart from Marin House for Embassy
- 0800 Meet RSO, DCM, AMB and POLOFF
- 1200 Lunch
- 1415 Meet with Dr. A.B. Karim – Acting Dean Faculty of Pure and Applied Science FBC
- 1515 Meet with Alhaji Kebbay – Director of SLEDIC
- 1615 Meet with Joseph Rahall – Director Green Scenery, Mary Street
- 1700 Arrive at Embassy
- 1900 Dinner

Wednesday 8th June, 2005

- 0900 Meet with John Solomon Kamara – Environmentalist, Ministry of Lands, Country Planning and the Environment Youyi Building
- 1000 Meet with Mr. Stephen S. Jusu – Director of Environment Ministry of Lands Youyi Building
- 1100 Meet with HRS Mohammed – Acting Director Forestry Division, Ministry of Agriculture Forestry and Food Security, Youyi Building
- 1200 Lunch
- 1315 Meet with Dr. Osman Bah – Njala University College Tower Hill
- 1400 Meet with Patrick Hammer Director General, Ministry of Agriculture, Youyi Building
- 1500 Meet with Mr. Kalie I. Bangura Senior Games Superintendent and Mr. Mohamed Mansaray Games Superintendent Forestry Division, Youyi Building
- 1600 Meet with Mr. D.D. Siaffa – Coordinator Conservation Society Pyke Street
- 1700 Arrive at Embassy
- 1830 – 2030 Reception at AMB Residence for USFS Team

Thursday, 9th June, 2005

- 0900 Meet with Professor John Kamara – Acting Chairman National Policy Advisory Council State House
- 1000 Meet with Chief Superintendent of Police, Vincent J. Nabbieu – Focal Person for Forestry and the Environment Sierra Leone Police Head Quarters
- 1100 Meet with Mr. D. Thompson – General Manager Guma Valley Water Company
- 1200 Matthew Cassetta depart for Helipad
- 1200 Lunch for rest of team
- 1300 Meet with Dr. A.R. Wurie Director of Mines Youyi Building, Brookfields

- 1500 Meet with Eugene C. Cole, Coordinator Environmental Forum for Action, US Embassy
1900 Dinner

Friday 10th June, 2005

- 0800 Depart Embassy
0900 Meet with Juliet Ceesay and staff of Environmental Foundation for Africa (EFA), Lakka
1200 Arrive Embassy / Administrative time
1800 Dinner

Saturday, 11th June, 2005

- 1300 Meet with Dr. Rosa Garriga Veterinary Doctor, Tacugama Chimpanzee Reserve, Regent
1530 Meet with Western Rural Council Representatives, Head Women Barthurst and Regent

Sunday, 12th June, 2005

Preparation of workshop materials

Monday, 13th – 16th June, 2005

USFS workshop: Western Peninsula Forest Reserve

Friday, 17th June, 2005

- 0800 Visit new US Embassy site with Brian McKinney
1000 Briefing with Christine Sheckler of USAID
1030 Briefing with Ambassador Hull
1130 Briefing with Mr. D. Thompson, Director of Guma Valley Water Company
1300 Meet with Bartholomew Kamara, Director of the Forestry Department

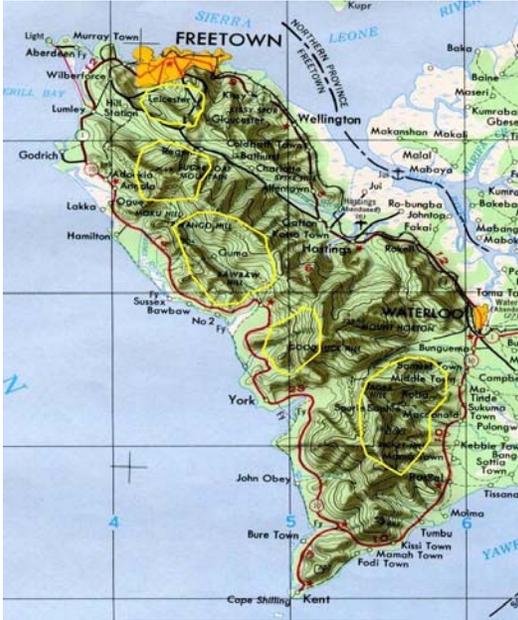
Saturday, 18th June, 2005

Preparation of trip report and talking points for US Ambassador Hull

Sunday, 19th June, 2005

John Almy and Marion Matthews depart Freetown

Appendix F



GROUP 1



GROUP 2



GROUP 3



GROUP 4

Figure 1 – Preliminary Identification of Core Protection Areas within WPR
Critical areas for protection denoted by yellow polygons.

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