THE REPUBLIC OF UGANDA

THIRD POVERTY REDUCTION SUPPORT CREDIT (PRSC3)

ANALYSIS OF ENVIRONMENT AND RESETTLEMENT ISSUES

1. This document presents an analysis of environmental and resettlement issues in the third annual Poverty Reduction Support Credit (PRSC3) for Uganda. This EA discussion builds upon the previous EA for PRSC2, and considering that PRSCs are sequential annual credits, repeats the previous impact and mitigation considerations, adding more details regarding resettlement and pesticides. The Annex is divided into four sections. Section I summarizes the project. Section II summarizes impact and mitigation measures. Section III presents the key environmental, resettlement, pesticide and other policy issues along with relevant mitigative measures and monitoring needs. Section IV discusses institution capacity building for issues of environment and involuntary resettlement in Uganda. Finally, Section V proposes indicative plans for monitoring and supervision.

I. CREDIT BACKGROUND

2. PRSC3 Goals, Objectives and Structures. PRSC3 will support the implementation of Uganda's poverty reduction strategy as spelled out in the Poverty Eradication Action Plan (PEAP) and summarized in the Uganda's Poverty Reduction Strategy Paper (PRSP). The overarching goal of PEAP policies and resource allocations is to reduce the incidence of poverty in Uganda (based on the headcount index) from 44 percent in 1997 to 10 percent or less by the year 2017. PEAP also sets forth the specific goals of achieving universal access to primary education, primary health care, safe drinking water, rural development, guaranteeing political freedom and human rights, and establishing an effective disaster relief system targeted at the poor. Government's strategy for poverty eradication is based on four pillars:

I. A framework for economic growth and transformation;
II. Ensuring good governance and security;
III. Directly increasing the ability of the poor to raise their incomes;
IV. Directly increasing the quality of life of the poor.

PRSC3 will continue supporting a set of reforms under each pillar.

3. PRSC3 Objective and Activities. The specific objective of PRSC3 is to improve public service delivery, given that poor public service performance is one of the key constraints to economic development and poverty reduction. In particular, PRSC3 will continue supporting the reform program adopted under PRSC1 and PRSC2, further developing it and deepening the rural agenda, specifically the agro-processing and marketing component. The reform program supports activities that raise the quality of life and incomes of the poor; specifically, improve access to and quality of education, health, water and sanitation services, and improve rural services. Since improving the delivery of these services requires a more broad-based action than only addressing sector-specific constraints to their delivery, the reform program focuses heavily on cross-cutting governance issues (such as public procurement, financial management, anti-corruption, and monitoring and evaluation) and public expenditure management.

4. Because of their significant focus on sectoral policies and institutions, PRSC1 and PRSC2 were classified for environmental purposes as a B, with the requirement that...
environmental analysis (but no separate environmental assessment report) be incorporated in credit documentation. PRSC1 was approved by the Bank’s Board in May 2001, PRSC2 in July 2002, and the Program Documents with all the annexes were disclosed to the public thereafter.

5. **PRSC3** will support activities in the following areas:

   (a) Public expenditure management, financial sector strengthening, and monitoring and evaluation: (i) align expenditure with PRSP priorities; (ii) include donor-financed projects and link staffing plan with the wage bill in the medium-term expenditure framework; (iii) reduce deviations from the budget; (iv) streamline inter-governmental fiscal transfers; (v) enhance results-orientation of sector expenditure programs; (vi) streamline and strengthen monitoring and evaluation arrangements; (v) strengthen financial sector performance.

   (b) Cross-cutting public sector reforms: (i) public service management (implement public sector pay reform, improve payroll management, control expansion of public administration, launch a public service reform); (ii) public procurement (update the legal and regulatory framework, reform procurement arrangements, strengthen enforcement of procurement rules and regulations, improve efficiency of National Medical Stores); (iii) financial management (update the legal and regulatory framework, improve accounting and reporting, strengthen audit structures and practices, implement regular expenditure tracking surveys); (iv) transparency (improve access to public information); (v) detection, investigation and prosecution of corruption; (vi) civil society participation (develop NGO policy and code of conduct); (vii) legal and judicial reform (implement commercial justice reforms to enhance enforcement of commercial contracts).

   (c) Promoting enabling environment for rural development: (i) research and technology (improve responsiveness and impact of publicly funded agricultural research); (ii) agricultural advisory services (increase access and effectiveness of agricultural advisory services); (iii) rural finance (develop legal and regulatory framework for microfinance); (iv) land (implement the 1998 Land Act in a prioritized manner, promote access to land by women and children/orphans); (v) environment (integrate environmental sustainability concerns in government programs); (vi) agro-processing and marketing (reduce constraints to agro-processing and marketing).

   (d) Improve quality of education: (i) primary education (reduce pupil-teacher ratio, pupil-textbook ratio, pupil-classroom ratio); (ii) post-primary education (develop and implement a strategy for the expansion of post-primary education).

   (e) Improving health care: (i) health care financing (rationalize health care financing); (ii) drug procurement and management (strengthen procurement and management of drugs and medical supplies); (iii) human resources (increase human resource for health); (iv) health infrastructure (improve health infrastructure).

   (f) Increase access to, reliability, affordability, and sustainability of water supply and sanitation (WSS) services: (i) rural WSS (strengthen decentralized planning, preparation, implementation and management; improve central government’s capacity to provide technical assistance to districts; utilize the local private sector for WSS delivery; develop a strategy for national hygiene promotion, sanitation, and communication); (ii) small towns WSS (introduce new management
In each of the sectors included in the PRSC, sector plans are prepared by sector working groups, which include government officials, donors, NGOs, and private sector representatives.

6. Environmental Classification and Safeguard Policy. Based on the credit objectives and structures, PRSC3 was classified as a sectoral adjustment credit (SECAC) at a meeting convened by the Bankwide PRSC Working Group on October 1, 2002, in accordance with the Interim Guidelines for PRSCs of May 2001. According to Bank policy, the Operational Directive (OD) 8.60, Adjustment Lending, and Operational Policy (OP) 4.01, Environmental Assessment, apply. Given the nature of the credit, which includes support to Uganda’s Plan for the Modernization of Agriculture, OP 4.09, Pest Management, is also applicable. Operational Policy Note (OPN) 11.03, on the Management of Cultural Property in Bank-financed Projects, OP 4.04, Natural Habitats, OP 4.36, Forestry, and OD 4.20, Indigenous People, may also be applicable to specific interventions undertaken by the Government using PRSC3 funding. In accordance with OD 4.01, the credit was categorized as a B without a separate Environmental Assessment (EA), and is so documented in the Integrated Safeguards Data Sheet. In accordance with the Bank’s revised disclosure policy, this environment and resettlement Annex has been disclosed through the World Bank Headquarters InfoShop, and in Uganda with the World Bank Kampala office InfoShop and to NEMA for distribution to the Districts.

7. Potential Environmental and Resettlement Impacts of PRSC3. Overall, the activities supported by PRSC3 are not expected to result in major adverse, or irreversible, environmental impacts. Biophysical environmental impacts, although thought to be modest given the nature of the activities, can be foreseen at this time only in a generic manner. The potential for land acquisition, resettlement, and effects on cultural resources also cannot be ruled out, but such effects are likely to be limited in extent given the de-emphasis on large-scale construction in the PEAP approach and the nature of IDA support to it. The environmental impacts of activities in agriculture, education, health and water and sanitation are expected to be sufficiently addressed by appropriate Ugandan institutions and implementing agencies. Potential conflict over land use, land tenure, and common property may arise in some of these sectors. IDA currently has a strong presence in the above sectors and will continue to work with counterparts to ensure that appropriate mitigative measures are promoted and incorporated into credit activities. Table 1 shows the investment projects that complement PRSC3 in the areas of environment, roads, agriculture, health, and water and sanitation and their development objectives in Uganda. As relevant, each of these investment projects fully incorporates Bank safeguards issues, management plans and the monitoring of environmental and social performance indicators.
### Table 1: Investment Projects Complementing PRSC3

<table>
<thead>
<tr>
<th>Name of Project</th>
<th>Project's Development Objectives</th>
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<tbody>
<tr>
<td><strong>Environment:</strong></td>
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<tr>
<td>Second Environmental Management Capacity Building Project</td>
<td>Promote sustainable environmental and natural resources management at the national, district and community levels.</td>
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<tr>
<td>Institutional Capacity Building--Protected Areas Management and Sustainable Use Project</td>
<td>Establish effective institutional capacity within wildlife and tourism sectors for strategic planning, program development and implementation, and promote long-term sustainability.</td>
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<tr>
<td>Lake Victoria Environment Credit</td>
<td>Rehabilitate the lake ecosystem.</td>
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<tr>
<td><strong>Roads:</strong></td>
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<tr>
<td>Roads Development Program</td>
<td>Improve access to rural and economically productive areas, and build up road sector planning and management capability.</td>
</tr>
<tr>
<td>Second Phase of the Road Development Program</td>
<td>Improve access to rural and economically productive areas, and build up road sector planning and management capability.</td>
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<tr>
<td>Road Sector/Institutional Support Technical Assistance Project</td>
<td>Strengthen the Government’s road sector management.</td>
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<tr>
<td>El Nino Emergency Road</td>
<td>Assist the Government to restore and rehabilitate key roads and bridges severely damaged by heavy rains associated with the El Nino weather pattern.</td>
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<tr>
<td><strong>Agriculture:</strong></td>
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<tr>
<td>Agriculture Research and Training</td>
<td>To support technology development and dissemination, consistent with Uganda’s Plan for Modernization of Agriculture (PMA).</td>
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<tr>
<td>National Agriculture Advisory Services Project</td>
<td>Establish an effective and sustainable demand-driven agricultural advisory service.</td>
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<tr>
<td><strong>Health:</strong></td>
<td></td>
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<tr>
<td>HIV/AIDS Control Project</td>
<td>Support the implementation of the National Strategic Framework for HIV/AIDS to reduce the spread of HIV; mitigate the health and socio-economic impact of HIV/AIDS; and to strengthen the national capacity to respond to the epidemic.</td>
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### II. SUMMARY OF IMPACTS, MITIGATION MEASURES, CAPACITY BUILDING AND MONITORING AND EVALUATION

**Sectoral Impact Analysis**

8. *Rural Development.* Potential adverse impacts of the activities under the Plan for the Modernization of Agriculture (PMA) include environmental and natural resource degradation due
to intensification of small-holder agriculture; expansion of large-scale agriculture (cash crops); increased use of agro-chemicals, and development of rural roads to support agricultural marketing. Such impacts need to be anticipated and managed appropriately. Several agencies are responsible for environmental management in Uganda. Ministry of Water, Lands, and Environment (MOWLE) and Ministry of Agriculture, Animal Industry and Fisheries (MAAIF) are responsible for management of sustainable natural resources development. National Bureau of Standard (NBS), National Agricultural Research Organization (NARO), and National Agricultural Advisory Services (NAADS) are responsible for mitigating impacts from agro-chemicals (including pesticides) through improvement of agricultural technology, research, and training. The Road Agency Formation Unit (RAFU) is developing capacity to screen activities and prepare environmental assessments and environmental management, and resettlement frameworks and plans for its own projects, including district roads. The National Environmental Management Authority (NEMA) coordinates intersectoral review of environmental impact assessments for projects that will significantly affect the environment, and reviews the work of the sectoral environmental units that it is helping to launch.

9. **Education Sector.** Construction of school building and sanitary facilities is not expected to cause significant adverse impacts. Most impacts are local and can be easily mitigated. The Government of Uganda mandates that measures of the Public Health Act be applied to construction of school buildings and other public works. The Bank needs to ensure that the Government’s standard requirement for school construction meet the Bank’s requirements and policies.

10. **Health Sector.** Concerns include construction activities as well as overall health care waste (HCW) management. Environmental risks are associated with hazardous medical waste materials, including possible infection from HIV/AIDS through used needles and blood waste; building health clinics and hospitals; construction of water supply and sanitation facilities. The Ministry of Health (MOH) has identified the Health Sector Strategic Plan (HSSP) to address the handling, storage and disposal of health care waste (HCW) at all levels of the national health care delivery system. This includes development of a management strategy, guidance, and human resources development. Such measures address various sanitation and waste issues, including the handling, storing and disposing hazardous medical wastes.

11. **Water and Sanitation Sector.** In the water and sanitation sector, the focus of the PRSC operation is to promote systematic reforms in the sector in order to ensure sustained access to safe drinking water and sanitation services and in particular, expand services to those who currently do not have or cannot afford such services. Under PRSC1, strategies were implemented to initiate nation-wide decentralized planning and management system that enhances community participation in choosing water and sanitation services as well as increases commitment to operation and maintenance of the service. Through MOWLE, environmental checklists for both design and operation of systems have been developed and incorporated into the Planning and Operational Guidelines for District WSS Conditional Grants. This includes a section covering environmental screening criteria for subproject appraisal and environmental requirements for contractors. It is also standard practice in Uganda for EIAs to be conducted for all investments and development projects (including but not limited to donor-supported projects) using guidelines developed at the sectoral level by the lead agency involved (MOWLE in this case) and NEMA (in this and other sectors). These guidelines and the environmental screening checklists were

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1 For purposes of this discussion, health care waste includes pharmaceutical, anatomic, radioactive, infectious, genotoxic, chemical, heavy metals, pressurized containers, sharps, and associated contaminated materials following WHO, Safe Management of Wastes from Health-Care Activities, 1999.

developed in Uganda to be directly compatible with World Bank environmental standards. Measures for protection of water sources will also be refined. The reorganized Directorate of Water Development (DWD) in MOWLE will engage trained staff and experienced consultants to implement these measures under PRSC3 and carry out annual environmental audits to ensure compliance by local governments. Expanded stakeholder consultation will also be provided through further training of staff.

Mitigation Measures

12. **Rural Development–Land Tenure.** The process of systematic land demarcation provides an opportunity for any land tenant/occupant to go through a formalized process of having land “certified” and then if desired “titled”. In general, a land owner can come to agreement on a settlement where the occupants can purchase the land, with money coming from the Land Fund. No resettlement cases are expected in the coming year, but as the implementation of systematic demarcation proceeds further, cases where resettlement is seen to be the way to resolve disputes may arise. The Prime Minister's Office will continue the development of national standards for this and other type of involuntary resettlement. Like the Bank, the Government is committed to ensuring that processes of involuntary land acquisition leave those affected no worse off than they would otherwise have been. The Bank will continue to explore options to support the intended updating of the background and policy work carried out in 1995, using the presence of the Bank's land tenure specialist who currently is based in the Kampala country office.

13. **Rural Development–Agriculture.** Potential adverse impacts associated with the PMA implementation will be mitigated through the National Agriculture Advisory Services Project (NAADS) that was approved in January 2001. A number of mitigation practices were identified in the NAADS EA. A Pest Management Plan, consistent with the World Bank safeguards, was prepared as part of the EA for NAADS, and it focuses on ensuring sustainable pest management activities, minimizing health and environmental pesticide risks and strengthened capacity for IPM and pesticide regulatory control. As part of NAADS supervision, a pest management specialist will undertake further evaluation of the situation in the country including collecting information on registration, monitoring and enforcement; site visits to NAADS service providers and identification of agrochemicals of concern and possible solutions for minimizing health risks and environmental hazards.

14. **Health.** A HCW management plan, consistent with World Bank guidelines, was endorsed by the Health Sector Review in October 2002. The national HCW planning is covered by the sector strategy.

15. **Water Supply and Sanitation.** MOWLE has developed environmental screening checklists for both design and operations, and they are being incorporated into the revised Planning and Operation Guidelines for district WSS conditional grants. IDA will continue to review the guidelines and the checklists. The checklists identify any potential environmental, land tenure, and resettlement impacts of proposed activities, and apply to borehole drilling for water supply, expanding and improving the existing water supply, latrine, other sanitation facilities, and wastewater treatment.

Public Disclosure

16. **Consultation and Disclosure.** In accordance with the requirements of the revised disclosure policy, this annex will be disclosed to the public in-country and at the World Bank Infoshop. Investments made with support of the PRSC will be subject to Government policy,
which likewise requires public consultation and for environmental impact statement (EIS) documents of projects with potential adverse impacts on the environment.

**Institutional Capacity Building**

17. *Environmental Issues and Mitigation Measures.* NEMA has the mandate to coordinate, monitor and supervise all environmental activities. The framework for environmental assessment and regulation is based on the National Environment Statute of 1995. The more recent Environmental Impact Assessment (EIA) Regulations of 1998 define in detail the EIA process, which requires, as appropriate, environmental impact assessments, environmental impact statements, and/or environmental audits for all private and public development projects. Basically, a system of EIA and monitoring that identifies adverse environmental impacts is in place. On physical cultural property, the Ugandan EIA system includes a stipulation to prevent destruction of cultural heritage, historic sites, and archaeological resources. NEMA undertakes the EIA oversight function, but leaves implementation to the relevant line ministries and departments. In addition, NEMA is developing EIA capacity in sectoral ministries, line-departments and at the district level through an ongoing investment project financed by IDA.

18. *Impact Assessment Institutional Capacity Building.* The Government’s implementing agencies have embarked on efforts to improve environmental management for sectors associated with PRSC3. The Bank will work with its counterparts in the Government to create a viable framework in identifying and tracking key issues. Through the IDA-supported Environmental Management Capacity Building Projects (EMCBP) I and II, IDA has been assisting NEMA to enhance environment management in lead agencies, districts and communities, in addressing environmental degradation problems and sustainable resource management.

**Monitoring and Supervision**

19. *Monitoring and Supervision.* A monitoring plan to review the Government’s EIA procedures and other relevant regulatory procedures for sectoral activities in the PRSC3 will be developed. In the context of annual PRSC preparation, the Bank is undertaking supervision to assure that the Bank’s requirements on environment assessment and resettlement are being complied with, including appropriate involvement of specialists.

**III. KEY ENVIRONMENT AND RESETTLEMENT ISSUES AND MITIGATION PLANS**

20. *Key Environment and Resettlement Issues of PRSC3.* There are direct and indirect environmental and potential resettlement issues primarily linked to reforms under the PEAP/PRSP Pillar III (Increasing the Ability of the Poor to Raise their Incomes) and IV (Directly Increasing the Quality of Life) of PRSC3. While the types of activities in each sector are known, the specific locations and conditions of activities will only be known as the implementing agencies execute their budget plans.

**Rural Development--Degradation of Environment and Natural Resources**

21. *Environmental Degradation.* PRSC3 addresses issues of environmental degradation by integrating environmental concerns in all government programs, particularly in modernization of agriculture (Pillar III). In Uganda, degradation of the environment and natural resources (ENR)

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sectors is estimated to range from 4 percent to 12 percent of GDP. The agricultural sector alone is estimated to be responsible for 86 to 91 percent of ENR degradation in monetary terms. This takes the form of deforestation, loss of natural habitats, loss of top soil, uncontrolled growth of water hyacinths, pollution of water bodies, illegal logging, and bush land burning.

22. **Environmental Regulations.** The National Environmental Statute of 1995 (NEMA Statute) and regulations passed under this statute are the principal safeguards to curb ENR degradation in Uganda. The Statute also mandated the National Environmental Management Authority (NEMA) to coordinate, monitor, and supervise policies/programs on environmental management. This is done primarily through the Environmental Impact Assessment (EIA) process. A large-scale agricultural project, such as development of cash crops (coffee, tea, oil palm, and sugar cane), which will affect the environment, is required to undertake an EIA. The Statute also promotes conservation in ecologically sensitive areas, such as lakes, wetlands, forests, and hillside areas. However, for high altitude crops, such as tea and horticultural crops, farming the hill sides may be unavoidable. For the ecologically sensitive areas, the following measures are recommended: use of appropriate farming methods, curbing of soil erosion, and protection of water catchments. The NEMA Statute prohibits activities that will reclaim and drain the wetlands; and limits other human activities in the wetlands. In the same manner, it also prohibits activities that will lead to the destruction of forest and hillsides areas.

23. **Soil and Water Conservation.** On farms, soil and water conservation is a priority. Agricultural development in Uganda is constrained by weathered soils whose fertility varies across districts. There are thirteen districts scattered through the Eastern, Central and Western regions. The districts with high population density—over 300 persons per sq. km—are those with good agricultural potential and high rainfall. Consequently, those are at risk of soil erosion (e.g., in the Jinja district and around Lake Victoria). Currently, the traditional farming systems to restore soil fertility and land productivity do not keep up with the rate of soil degradation and population pressure on land.

24. **Mitigation and Management of ENR impacts.** Mitigation and management of adverse impacts on natural resources are mainly the responsibility of NEMA, MOWLE, and MAAIF. The research and extension advisory services agencies, NARO and NAADS, support those agencies in managing adverse environmental impacts of agricultural sector through research and training. IDA has funded several capacity building initiatives in Uganda, including current investment support to NARO and NAADS. The agencies are expected to play important roles with regard to compliance with environmental, resettlement and other relevant policies in Uganda.

**Rural Development—Use of Agro-chemicals**

25. The Pharmacy and Drug Act was enacted in Uganda in 1970, but it was not until 1989 that an Agricultural Chemicals Statue came into effect. The manufacture, storage, distribution, trade, importation and exportation of pesticides are controlled by the Agricultural Chemicals

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6 NEMA Statute sections 37,38; and 39-47.


8 More details regarding pesticide use, regulation and donor programs are available in several technical memos prepared during PRSC preparation missions.
Annex 6

Statute (ACS) Number 8 of 1989 and by the Statutory Instrument Supplement No. 23 of the ACDS Regulations of 1993. This led to the creation of the Agricultural Chemicals Board (ACB) consisting of 13 members that ensure agricultural chemicals are duly registered in the country and are used in a manner consistent with the rules made by the state. The Board appoints an Agricultural Chemicals Technical Committee (ACTC) to advise the Board on technical matters and both of these operations fall under the Ministry of Agriculture, Animal Industry and Fisheries (MAAIF).

26. Importation and distribution of pesticides and other agricultural inputs used to be conducted by the Government and its parastatals, but recent privatization initiatives, have seen the Government remove itself from this role including removal of subsidies for these products. Aligned with this process was the removal of import taxes on agricultural chemicals, which is thought to have increased the availability of pesticides to producers. USAID reports suggest that the number of pesticide shops and dealers in the country has remained constant or increased since this change, suggesting that consumption of pesticides is substantial or growing. This is hard to quantify and other informed sources indicate that there is relatively low use of pesticides throughout the country by small subsistent farmers.

27. Registration of agricultural chemicals, dealers, fumigators and premises is provided annually in the Uganda Gazette, including trade name, common name and firm, and/or propriety. Although there are good regulations in place, enforcement is variable. Unregistered pesticides are still being sold without ACB registration, such as malathion, diazinon, Rogor, and sulfur. There are cases of pesticides being repackaged and sold in smaller amounts without proper labels. Although the regulation requires sales of pesticides to be in separate buildings, it is rare to find this followed. Lack of staff hinder enforcement, only one person handles registration applications and inspection of pesticide premises for the whole country. The Public Service Commission has still not approved the request for additional staff and district agricultural officers have been asked to undertake some of these roles.

28. Other constraints in the area of pesticide usage and management include:

- Inadequate monitoring, enforcement and policing mechanisms;
- Lack of residue and analytical capacity for purity of active ingredients, residue on foods and toxicological acceptability;
- Lack of registration of pesticides for specific use on specific crops;
- Lack of adequate public information on registered pesticides; and
- Limited number of registered pesticides.

29. Specific details for the agriculture sector nationally are elusive. Several donors are actively engaged with targeting specific changes and improvements regarding pesticide policy and use.

30. The current process of providing farmer extension in the majority of districts, since only 16 districts will be covered at the completion of NAADS, is difficult to discern, since discussions with the Commissioner of Crop Protection, the Department of Crop Protection in MAAIF and national experts indicate that there is currently no national level information on application quantities and changes in farmer practices as a result of the extensive extension and demonstration activities that cover a wide spectrum of farming practices.

31. Pesticide Management. Measures to mitigate potential adverse impacts of pesticide use will be taken through the ongoing National Agriculture Advisory Services Project (NAADS) that
was approved in January 2001. The goal of NAADS is to increase security of rural livelihoods with sustainable improvements in agricultural productivity and household incomes through increasing commercialization of farming. The project aims to transform the existing public extension service to a decentralized, largely farmer-owned and private sector advisory service. As of early 2003, NAADS was operational in 16 districts, with the process of expanding its programs to more districts slower than originally intended.9 There is an expectation that the good practice in crop production will eventually expand to most of the country. As a category B project, a EA for NAADS was prepared in July 2000, and a Pest Management Plan in September 2000.

32. Although agro-chemical use is relatively low in the country, NAADS is facilitating intensification of smallholder agricultural production systems, potentially increasing the use of fertilizers and other agrochemicals. Mitigation practices identified in the NAADS EA include:

- Training of input suppliers in precautionary measures required for the handling, labeling and application of agrochemicals under field conditions. These measures will include advise on pesticide stock management procedures and record keeping practices; pesticide storage, use of protective equipment; use and cleaning of application equipment; and emergency plans in response to spillage and/or contamination.

- Training of farmers and service providers in use and handling of agrochemicals.

- Promotion of reduced input production systems and avoidance of the use of pesticides whenever practicable by using alternative pest management methods, including best mix of biological or cultural controls.10

33. The NAADS Executive is responsible for environmental monitoring and evaluation by specifying in the contracts the obligations and environmental mitigation measures to be taken by the contractor. Each contractor will be responsible for ensuring that monitoring and record keeping conform with environmental obligations by presenting written records for inspection to the NAADS Executive and/or designated alternatives at local government level.

34. Pest Management Plan. The Pest Management Plan prepared for NAADS focuses on ensuring sustainable pest management activities, minimizing health and environmental pesticide risks, and strengthening capacity for Integrated Pest Management (IPM) and pesticide regulatory control. The plan summarizes the current status of pesticide use in the country, pest management approaches for specific crops (i.e., cotton, vegetables, bananas), IPM experiences, and farmer training in IPM. It indicates that information on the use of pesticides is limited, farmer application of pesticides might lack proper dosage, mixing procedures are varied and observation of safety requirements questionable. However, the National Union of Plantation and Agricultural Workers has since then initiated training activities on safe handling of pesticides.

35. Pesticide registration came into effect in 1994 and to date 233 chemicals have been registered following FAO Code of Conduct and PIC mechanisms are observed. Traders are registered and licensed while large-scale importers must acquire a certification for handling and transport and their personnel undergo training for safe pesticide handling. In addition, these importers must have their facilities meet certain specifications and general safety requirements. Commercial operators have to be certified to ensure safe chemical use.

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9 In districts not covered by NAADS, donors and agricultural research centers are supporting agricultural extension that includes IPM and other sustainable practices.

10 At the end of December 2002, 1,118 farmer groups were registered and trained, translating to about 44,000 farmers. At the end of the project, NAADS is expected to have reached about 400,000 farmers in total.
36. Statistics concerning pesticide poisoning are not available, the capacity for analysis of in-situ residues is limited, and there is no systematic monitoring for residue levels. The capacity to monitor pesticide use and storage and enforcement of regulations is also limited. Research on IPM is ongoing as part of the strategy in the agriculture sector to enhance farmer productivity. In general, there is farmer awareness on holistic management that addresses soil and water management as well as IPM. This consists of farmer pilot training and extension capacity building in crop ecology.

37. The plan identifies the following mitigative measures:

- Crop management training for service providers and farmers including integrated approaches to soil, water, plant and nutritional management and IPM;
- Improving IPM skills for service providers;
- Ensuring that service providers with experience in integrated production and pest management at the district level is expanded;
- Observing IPM approaches if pesticides are used as part of demonstration activities; and
- Ensuring that pesticides use is in compliance with existing laws and regulations, particularly MRLs for commercial export crops.

38. Also, the plan recommends the following monitoring and evaluation measures to be taken through NAADS:

- Training activities on integrated management for service providers and farmers;
- The knowledge and skills acquired by farmers;
- IPM principles for field trials, farmer demonstrations, and service providers followed in accordance with the principles of the World Bank approved Pest Management Plan; and
- Pest management approaches by service providers and farmers.

39. **NAADS Policy and Strategy.** The NAADS draft (October 2002) policy and strategy framework for natural resources cover a wide array of issues and challenges, including agrochemical use and EIAs. Key challenges are listed in Table 2 below.

<table>
<thead>
<tr>
<th>Issue</th>
<th>Key Challenges for NAADS</th>
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<tbody>
<tr>
<td>Agrochemical Use</td>
<td>- Promoting appropriate use of agrochemicals as part of integrated farm management</td>
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<tr>
<td></td>
<td>- Quality assuring private service provider advice on agrochemicals (e.g. regulations, appropriate use, health and safety, etc.)</td>
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<td></td>
<td>- Promoting alternatives to high agrochemical use</td>
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<td></td>
<td>- Clarification of what agricultural activities require EISs</td>
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<td></td>
<td>- Updating EIA/SIA of NAADS</td>
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<td></td>
<td>- Training and information provision on EIA issues for service providers</td>
</tr>
<tr>
<td>Environmental Impact Assessments (EIAs)</td>
<td>- Capitalizing on current practices of sustainable agriculture and low agrochemical use</td>
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</table>

**Table 2. Key Natural Resource Management Challenges for NAADS**

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11 As specified in the section on guidelines for implementation.
40. Specific actions that are identified under advisory and information services dealing with pesticides include:

- **Service provider contracts**: clauses in contracts which require adherence to NAADS principles and guidelines on what natural resources-specific clauses should be included in particular contracts (e.g., on use of agrochemicals, requirements for EIAs, environmental impacts of certain enterprises, e.g., floriculture).

- **Production of guidelines and criteria**: production of environmental guidelines, checklists etc. for service providers, ensuring that guidelines highlight the need to include natural resources-related issues and requirements, guidelines and checklists for including natural resource issues in planning and outputs.

41. **PMA Sub-Committee on Natural Resources.** A PMA sub-committee on natural resource management has recently been established to ensure that the vision for environmental sustainability as outlined in the PMA is achieved. Representatives from agencies and organizations dealing with PMA issues will review the PMA implementation to ensure that natural resource use and environmental issues have been adequately addressed. The three focal areas of this group are to (i) monitor sustainable natural resource use & management in the PMA, (ii) provide technical oversight in environmental and natural resource issues in the implementation of PMA priority areas, and (iii) support natural resource sectors to become PMA compliant. The committee has recently issued a proposal to monitor sustainable natural resource use and management in the PMA in over a dozen thematic areas. The monitoring work of this Sub-Committee is based on establishing measurable indicators, and efforts to strengthen the various implementation frameworks. This sub-committee reports on progress to the PMA Steering Committee.

42. **PMA Monitoring and Evaluation Framework.** The overall PMA monitoring and evaluation framework is designed to monitor inputs, outputs, and outcomes through performance, beneficiary, and impact assessment of the seven PMA components. The current framework does not include indicators on pesticide use nor management, but includes an output indicator focusing on environmental guidelines for sectoral plans and programs that is related to pesticides. However, a set of environmental indicators related to integrated natural resource management and agrochemical use has been further developed by environment and safeguard specialists, and the plan is to integrate these into the overall PMA M&E framework. The indicators are designed to provide qualitative information to verify World Bank pesticide safeguards are adhered to and will also link to the NAADS supervision activities.

43. **World Bank Supervision.** The NAADS project is still in its early stages of implementation and the World Bank Task Manager has reiterated her intention to ensure that the pesticide issues as identified in the NAADS EA and PMP will be supervised. This will take the form of using pesticide specialists to verify, in the field, that proper measures are being undertaken and review the chemical registration process.

44. During PRSC4 preparation, the Bank together with the Government will explore and agree on ways to further strengthen pesticide management and explore incentives for IPM. The work will focus on pesticide registration, selection, and the overall regulatory framework governing pesticides. Specific actions that will be undertaken include:
Annex 6

- Gathering details concerning Government and donor activities on IPM and pesticide management policy, practices and programs throughout the country, focusing on specific agro-ecological zones, crop types, and farming practices;
- Collecting information on current status on pesticide registration, new registrations, and monitoring and enforcement plans;
- Conducting site visits to NAADS service providers to identify measures taken based on the NAADS EA and Pest Management Plan; and
- Identification of agrochemicals of concern, specific hazards to human health, and suggestions to address such problems.

Rural Development—Land Tenure

45. The Land Act passed in 1998 provides for regularizing land tenure under mailo, freehold and customary tenure regimes. The Land Sector Strategic Plan prioritizes implementation of the Act, and forms the basis for the National Land Policy, capacity building for land administration, and implementation of three pilots on land consolidation and land readjustment in Soroti, Masaka, and Ntungamo. Pilots will provide an opportunity for any land tenant/occupant to go through a formalized process of having land “certified” and then if desired “titled”. In general, land owners, tenants, and sub-tenants (who may or may not have a title—the land registry has degraded over the past 20 years) can come to agreement on a settlement where one or another party can purchase the land rights of the others. Discussions have continued for the past year on mechanisms for the Land Fund to provide some of these financial resources to assist in land purchase, but the details are still to be worked out.

46. Under the Land Policy, two kinds of land adjudication processes may be undertaken. The first is a process that addresses poverty by moving toward security of tenure under modern mechanisms that will allow land to be used as security for land improvement finance and other purposes. It is based on a process for individuals to address matters pertaining to land occupancy and ownership that is being gradually established at the district levels. No resettlement is expected in the pilot areas, since occupants and tenants will acquire certificates through the demarcation and adjudication process. If people have occupied land for an extended period, they will not be required to move.

47. Another process the Land Commission may choose to implement is sorting out historic claims of major land areas disputed by various ethnic groups, which may also include lands administered by districts with residents belonging, by affiliation, to a chief or king. For example, in Kibale district, the Land Commission is currently sorting out land occupancy between several ethnic/tribal groups, and the Land Fund is being used to provide payments for demarcation and settlement of tenants and occupants. Some resettlement may at later point take place in this region since some people, if inappropriately occupying land, could be required to leave after adjudication. The Bank will continue its dialogue with appropriate authorities to encourage the use of the Land Fund for settling land tenure issues other than historic ethnic claims.

48. A National Policy on Resettlement was drafted in 1995, but not passed by the Cabinet or the Parliament. Further work to bring it into effectiveness rests with the Prime Minister’s office. The Bank currently has no project in the land sector addressing these matters, but the Government has asked the Bank to engage in discussions on the resettlement policy. The Bank intends to continue its discussions with the authorities to move the Resettlement Policy forward. The Bank in the context of PRSC2 and PRSC3 preparation has communicated to the Ministry and Land Commission that if individuals are required to move off currently occupied lands or resettle as
part of the LSSP process, appropriate Resettlement Action Plans or Frameworks will have to be completed.

Rural Development--District Road Work

49. **District and Rural Roads.** Agricultural marketing in Uganda is constrained by the poor quality of the road network. More than 90 percent of Uganda’s road network consists of earth and gravel roads and 25 percent of the rural roads in the districts are impassable during the rainy season.12 During PRSC3, a program of district and community roads will be begun. This program will run parallel to and be guided by the principles of outsourcing and the environmental regulatory frameworks in the long-term Roads Program (APLs 1-4) currently under implementation in Uganda. In parallel with this national program, the Ministry of Works, Housing and Communication (MOWHC) has initiated a sectoral Environmental Liaison Unit in charge of promoting, developing, and disseminating guidance in environmental issues, and the training of transport staff in particular. This work is consistent with the national mandate that lead agencies should build up their own environmental regulatory capabilities, to carry out the work in environment that they need to do in liaison with NEMA. In any case, the vast majority of the work to be carried out in the PRSC will involve stabilizing and reconstruction of existing minor roads at the community and district level, with no changes of alignments, widening, or hard surfacing. Thus, no environmental or land acquisition issues will arise, except for minor drainage and maintenance works. Appropriate environmental measures are already built in to the district roads crews standard operating procedures.

Education--School Building Construction

50. **School Building Construction.** No significant environmental impact is expected from school construction. Minor impacts are associated with physical activities such as construction of classroom, dormitories, latrine and other facilities. The activities are regulated by the Government in the Public Health Act (sections 72 and 73). Standard requirements for classroom construction include approved lists of materials, location of latrines with washing facilities and safe drinking water. The Bank needs to ensure that the Government’s standard requirement for school construction meets the Bank’s requirement and policies.

Health--Disposal of Health Care Waste in Health Units, Health Centers and Hospitals

51. **Health Care Waste.** Uganda is committed in its policies to ensure that no harm comes to people from the management of health care wastes (HCW) or from gaps in sanitary facilities at health care institutions. To date, it is difficult to assess the general status of sanitation and medical waste at health facilities in Uganda because of limited data. Generally there is a need for significant improvement in both areas. The following are the Ugandan problems in health care wastes:

- Pharmaceutical waste includes drugs and chemicals that are outdated, contaminated, spilled or no longer required.
- Radioactive waste includes solids, liquids and gaseous radio nuclides generated from in vitro analysis of body tissues and fluids, in vivo body imaging and tumor localization and therapeutic procedures.
- Anatomic or pathological waste consists of human and animal tissues, organs, body parts, fetuses, blood and body fluids.

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• Sharps comprise needles, syringes, scalpels, blades, broken glass and other puncture inducing items.
• Infectious waste that can transmit infectious disease with pathogen concentrations and quantities of that are of concern for exposure originate in laboratories, infectious patient wastes, surgery and autopsies.
• Other waste of concern include genotoxic, chemical, heavy metals, and pressurized containers.
• Communal/domestic type material such as packaging, paper and plastic products and other organic material.

52. **Health Care Waste Strategy.** Strategy for health care waste management was drafted through dialogue with the appropriate decision-making and national authorities. The national HCW planning process led by a task force that includes representatives from all the relevant ministries. The proposed national HCW policy and strategy includes:

- Strategy for proper HCW management and disposal.
- Prevention and reduction of waste generation.
- Means of monitoring of infection control and environmental protection.
- Use of appropriate technology for packaging, transportation, treatment, and disposal.
- Central or decentralized treatment and disposal.
- Distribution of responsibility in the sector between national and local governments.
- Recommendations on private sector involvement.
- Investment plan for implementation of improved HCW management.
- Mechanisms for financing health care waste management.
- HCW management training programs at facility and municipal/district level.

53. **Health Care Waste Management by Type of Facility.** Specific HCW management considerations related to the key health care facilities in Uganda are outlined in Table 3.

<table>
<thead>
<tr>
<th>Table 3: Considerations for Health Care Waste Management at Small and Large Health Care Facilities</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Small facilities</strong></td>
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<tr>
<td>Raise awareness at the management level.</td>
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<tr>
<td>Develop an integrated HCW management plan.</td>
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<tr>
<td>Ensure segregation of special HCW from other waste.</td>
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<tr>
<td>Determine appropriate treatment and disposal site for facility.</td>
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<tr>
<td>Train health care workers in proper HCW procedures.</td>
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Water Supply and Sanitation

54. **Water Sector Standards and Guidelines.** Currently, all water supply and wastewater projects will have to meet existing national environmental standards and water sector guidelines.\(^\text{14}\) In addition, all larger village and urban potable water supply and distribution systems and wastewater proposals (covering population clusters of above 5,000 people) submitted to the DWD will undergo a prescribed EIA process that includes the following information:

- Description of the project and identification of all phases;
- Description of the proposed site and reasons for rejecting alternative sites;
- Environmental effects of the project, including direct, indirect, cumulative short-term and long-term effects and possible alternatives;
- Measures proposed for eliminating, minimizing or mitigating adverse impacts; and
- A monitoring and evaluation program.

55. **Water Supply Regulations.** Regulations concerning water supply fall under the Water Resources Regulations of 1998. They specify particular requirements for (i) any water extraction by motorized water pump that temporarily or permanently pumps water from a borehole or waterway and (ii) weir, dam, tank, or other work capable of diverting or impounding an inflow of more than 400 cubic meters in any 24-hour period. Furthermore, both drilling and construction permit requirements include submission of standard application forms. Since DWD is the delegated NEMA agency, all EIA and technical requirements are managed by DWD, specifically in the Water Resources Division. Based on these standards, guidelines and current practices, the EIA process in the sector is characterized by the features highlighted in Table 4.

**Table 4: Key Elements of the EIA Process for Water and Sanitation Projects—Design and Construction**

<table>
<thead>
<tr>
<th>Objective</th>
<th>Responsible Party</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ensure that environmental issues are considered as part of design.</td>
<td>District WSS Units</td>
</tr>
<tr>
<td>Ensure that environmental impacts are reduced or minimized at site.</td>
<td>DWD Water Resources Division and Technical Support Units</td>
</tr>
<tr>
<td>Solicit feedback from affected stakeholders</td>
<td>Commissioned Consultants and Contractors</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Actions</th>
<th>Verification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Review the current environmental condition at the site.</td>
<td>Subproject appraisal by District WSS Units</td>
</tr>
<tr>
<td>Assess the potential environmental impact associated with the proposed scheme.</td>
<td>Environmental Impact Statement for large projects</td>
</tr>
<tr>
<td>Identify mitigation measures in construction and operation.</td>
<td>Independent Environmental audit within a period of 12 months after completion of project</td>
</tr>
<tr>
<td></td>
<td>DWD inspections</td>
</tr>
</tbody>
</table>

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56. **Protection of Water Sources, Drinking Water Standards and Sanitary Conditions.** There are several types of small-scale rural water supply schemes in the country: shallow wells, boreholes, protected natural spring water points and borehole pump and distribution systems. Most of the environmental considerations for water supply schemes involve avoiding water contamination. Measures should be taken to ensure initially good water quality. During operation of the system, measures need to be taken to prevent contamination from agricultural activities, grazing animals, and human contamination. Borehole construction in alluvial areas with intense sugar cane production is of potential concern because of concentrated pesticide treatments. Testing of the water supply should be performed regularly to detect any contamination to the system, and this should be done in conjunction with periodic chlorine treatment under certain circumstances. Also, proper training of technicians is critical to ensure that adequate maintenance occurs for both the single source and network water systems. The MOWLE has developed environmental screening checklists for both design and operations which has been incorporated into the revised Planning and Operation Guidelines for District WSS Conditional grants. IDA will review the guidelines and the checklists for compatibility with OP 4.01 during Appraisal of PRSC3. These checklists identify any potential environmental, land tenure, and resettlement impacts of proposed activities. These checklists apply to borehole drilling for water supply, expanding and improving the existing water supply, latrine, other sanitation facilities, and wastewater treatment.

57. **Water Distribution.** The PRSC will be used mainly to extend focus on rural water supply for the poor. DWD and other water delivery programs incorporate standard water quality analysis to assess potential point water sources. Post-construction water quality monitoring is also undertaken. Data collection and reporting procedures are regularly undertaken, yet such data is not fully utilized. For example, monthly water quality reports for one district showed high levels of nitrates among numerous spring point sources, yet no one had determined possible causes. Improved data analysis at the regional and national level as the delivery of potable water is expanded will become more important to identify potential environmental and human health concerns. Other issues including access to drinking water and sanitation services as well as resettlement requirements for the larger construction schemes will be summarized in a standard report summary.

**Public Disclosure**

58. **Disclosure.** PRSC3 has been categorized as a B (without a separate EA) under OP 4.01. The requirements of the Bank’s revised disclosure policy for Category B projects apply for those appraised after January 1, 2002. The Bank’s policy also requires public consultations and disclosure for activities with potential adverse impacts on the environment in sectors supported by PRSC that will occur in the future. The requirements include discussions of the project’s potential environmental impact with the project affected groups and local NGOs, and take their views into account. Similarly, the Government mandates public consultation, stakeholder involvement, and information disclosure of projects with potential adverse impacts on the environment through the EIA process. Public consultation with local NGOs and affected people has been the normal pattern within Bank assisted-projects in Uganda, and non-Bank projects under NEMA-led EIA procedures, for several years. Some stakeholders feel that the consultation could be improved by a better selection of NGOs, and by following through more proactively on stakeholder feedback during project implementation.

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15 OP 4.01, para 15.
16 Conversation with Mr. Kivoumbi of NGO Environmental Alert in Kampala, October 2001.
59. **Outreach in Water and Sanitation Programs.** Poor communities may have little opportunity to learn about programs designed to help them. In the case of a water and sanitation project, DWD uses mobilizers, staff trained in social work, to undertake community out-reach programs and conduct community consultations. These staff also engage in sanitation and health promotional programs. It is common practice now for DWD to assist in organizing water committees that identify the type of water system they want and are willing to pay for and procedures for operating and maintaining the water supply facilities. In numerous cases, access to water is controlled at public standpipes by an approved operator who is entitled to charge for water and is also responsible for paying monthly-metered water bills. Restricting hours of operation, reduction in the number of faucets and social conflicts regularly occur. Practical mechanisms to quickly identify such problems and engage in conflict resolution are required to ensure that water is available.

**IV. INSTITUTIONAL CAPACITY BUILDING FOR IMPACT ASSESSMENT**

60. **NEMA’s Mandate.** In Uganda, NEMA has the mandate to co-ordinate, monitor and supervise all environmental activities. NEMA leads an oversight function on EIA but leaves its implementation to the relevant line ministries and departments. In practice, NEMA is the focal institution and the EIA has become a primary tool for safeguarding the environment from the adverse impacts of development activities in Uganda. To further the effort, NEMA has developed EIA guidelines (including public hearing guidelines), code of conduct for EIA practitioners, regulations for appointing inspectors, and environmental easements. From January 1996 to September 2001, a total of 286 projects were subjected to EIA; 314 projects received certificates; 9 environmental audits were conducted; 15 projects were stopped. Supported by IDA-funding through the EMCBP credits, NEMA also builds EIA capacity in sectoral ministries, departments, and at the district levels. NEMA also assists districts to establish and strengthen the statutory management institutions and ensure adequate community inputs into district environmental planning and management. Since 1996, 41 out of 56 districts have recruited District Environment Officers (DEOs). In addition, NEMA has helped to recruit 54 environment inspectors. To enhance NEMA capacity, the Bank approved the Second Environmental Management and Capacity Building Project (EMCBP-II) in February 2001.

61. **NEMA’s Capacity in Relation to PRSC3.** Currently, NEMA is, and has been, largely donor-funded. This is a risky situation that creates uncertainty about the sustainability of its programs. At the district level, similarly, resources and funding to recruit personnel and to make the DEOs operational are inadequate. This lack of capacity undermines full integration of environmental concerns at local government and community levels. Several ways to improve environmental management could be mainstreamed within the framework of PRSC3: (i) improving the effectiveness of the institutional arrangements to address environmental concerns across government programs; (ii) integrating environmental risks and opportunities into districts and municipal government development plans, and taking steps to implement the management plans; (iii) implementing sectoral environmental policies (such as pest management, agricultural chemicals, medical waste, forest conservation, etc.); and (iv) ensuring that funding for NEMA is reflected more in the government budget. At the district and community levels, planning and decision-making require the appropriate measures to conserve water, soil, and forests, to keep the human environment healthy; and to ensure that more intensive development in rural and urban areas does not introduce unmanaged dangers of environmental degradation, displacement, or tenure conflict. Key to supporting these efforts is continually improving human resources in environmental management through institutional capacity building and training. NEMA, under IDA-assisted project, has been building capacity within the sectoral ministries/lead agencies.
V. MONITORING AND SUPERVISION

62. Environmental and Land Acquisition/Resettlement Monitoring Plan. Monitoring plans are needed to ensure that adverse environmental impacts are addressed and any land acquisition and resettlement are adequately implemented and sustained in each of the key sectors which the PRSC will support. The NEMA statute indicates that “the lead agencies should monitor compliance and implementation of activities to ensure that the design criteria, mitigation measures, and monitoring plans are implemented, the monitoring plan should also identify the key indicators of environmental impacts.” A simple and practical array of potential monitoring indicators is provided below in Table 5.

63. Relationship of Monitoring Plan to PRSC3 Monitoring. The monitoring plan for environment and land acquisition/resettlement is incorporated into the overall PRSC3 monitoring plan described in the Credit documentation and overseen by the Ministry of Finance, Planning and Economic Development (MOFPED). Consequently, MOFPED will be the ultimate information focal point. The relevant sector will be responsible for submitting appropriate information as described below to the PRSC Steering Committee and PRSC Technical Committee. The PRSC Steering Committee will provide a report to IDA on the issues addressed in this Annex on an annual basis. At this point in time, the progress in providing this information has been less than desirable, and further steps need to be taken to improve this reporting. This report will be expanded as additional sectors are added to the subsequent annual Credits.

64. Subsequent PRSCs. In preparing subsequent PRSCs, IDA will include participation of environmental and resettlement specialists. These specialists will review progress in implementing the Environmental Monitoring Plan (EMP). The specialists will coordinate with other IDA staff in the relevant sectors to ensure that appropriate environmental assessment, resettlement, and other relevant policy issues are addressed and any consequent management plans are being implemented. Where additional capacity building is needed, the PRSC team will work with the selected sector agencies to develop such initiatives. The missions will review the performance of sectoral procedures and progress in increasing awareness of and appropriate measures for environmental and other concerns as detailed in this analysis.
<table>
<thead>
<tr>
<th>Sector and Issues</th>
<th>Monitoring Indicators</th>
<th>Responsibility</th>
<th>Information Collection Process and Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture/Rural Development Sector:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Natural Resource Degradation in Large-Scale Agricultural Projects</td>
<td>EIAs are prepared by investors and reviewed (by NEMA); management plan is integrated into project implementation</td>
<td>NEMA, NAADS, MAAIF, NARO, PMA Steering Committee, and districts. Districts are responsible for implementing programs and projects. Activities like training for service providers, waste management, etc., have to take place in the districts</td>
<td>Annual records/survey</td>
</tr>
<tr>
<td>Soil conservation in Smallholder Agriculture</td>
<td>Improved soil and water conservation; judicious application of agricultural inputs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Increasing Quantities of Agro-Chemicals used by Agricultural Activities</td>
<td>PMP is designed, ensure that pesticides are used in accordance with IPM principles for NAADS districts</td>
<td>NEMA, NAADS, MAAIF, NARO, PMA Steering Committee, districts (see above discussion on the districts), and NBS. Capacity building for community and farmer level monitoring</td>
<td>Annual records/survey</td>
</tr>
<tr>
<td>Agro-chemicals used by Small Holder Agriculture</td>
<td>MRL (Maximum Residue Level) is observed particularly for commercial crops</td>
<td></td>
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<tr>
<td>Waste and effluent from Agro Processing</td>
<td>Waste management and environmental audit for selected agro processing facilities</td>
<td>In addition to the above authorities: selected private sectors</td>
<td></td>
</tr>
<tr>
<td>Resettlement</td>
<td>Reports of any resettlement actions based on Land Tribunals or Land Fund expenditures</td>
<td>Land Commission</td>
<td></td>
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<tr>
<td>District Roads:</td>
<td>Policy and implementation arrangements, including related environmental guidelines, for road construction and maintenance works developed and adopted</td>
<td>MOWHC and Districts</td>
<td>Annual Review</td>
</tr>
<tr>
<td>Sector and Issues</td>
<td>Monitoring Indicators</td>
<td>Responsibility</td>
<td>Information Collection Process and Frequency</td>
</tr>
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</tr>
<tr>
<td>Health Sector: Health Care Waste</td>
<td>Improvement of institutional capacity for transportation and environmental management, including training for staff and contractors.</td>
<td>MOH, Environmental Health Division, NEMA (for review of EIAs), district health inspectors</td>
<td></td>
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<tr>
<td>Waste Supply and Sanitation Sector</td>
<td></td>
<td></td>
<td>Annual Review/Survey</td>
</tr>
<tr>
<td>(wastewater treatment, sanitation facilities, and water supply and distribution)</td>
<td>EIA or Environmental Review for construction of new facilities</td>
<td>DWD Water Resources Division and Technical Support Units at district level, other WSS Authorities, NEMA (for review of EIAs)</td>
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<td></td>
<td>Environmental guidelines/checklist are prepared and used in operation stage</td>
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<td></td>
<td>Conduct selective/random environmental audits for HCW facilities</td>
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<td></td>
<td>Awareness training incorporated into health care professional and technical curriculum</td>
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<td></td>
<td>EIA or Environmental Review for urban large scale construction of new facilities</td>
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<tr>
<td></td>
<td>Environmental guidelines/checklist are prepared and used in operation stage</td>
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<td></td>
<td>Conduct selective/random environmental audits for WSS facilities</td>
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<tr>
<td></td>
<td>Awareness training incorporated for WSS professionals</td>
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