



STAKEHOLDER ASSESSMENT REPORT

**Regarding Community and Civil Society concerns in relation to activities of the
Nicaragua Sugar Estates Limited (NSEL), Nicaragua**

December 2008

*Office of the Compliance Advisor/Ombudsman
International Finance Corporation/
Multilateral Investment Guarantee Agency
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LIST OF ACRONYMS

CAO	Office of Compliance Advisor/Ombudsman
CRI	Chronic Renal Insufficiency
IFC	International Finance Corporation
ISA	San Antonio Sugar Mill or <i>Ingenio San Antonio</i>
IWRM	Integrated Water Resources Management
MAGFOR	Ministry of Animal Husbandry and Forestry
MARENA	Ministry of Environment and Natural Resource
MIGA	Multilateral Investment Guarantee Agency
NSEL	Nicaragua Sugar Estates Limited

1. Introduction

The Office of Compliance Advisor/Ombudsman (CAO) is the independent recourse mechanism for the International Finance Corporation (IFC) and the Multilateral Investment Guarantee Agency (MIGA) of the World Bank Group. The CAO reports directly to the President of the World Bank Group, and its mandate is to assist in addressing complaints from people affected by projects in a manner that is fair, objective, and constructive and to enhance the social and environmental outcomes of projects in which IFC and MIGA play a role. In the first instance, complaints are responded to by the CAO's Ombudsman function.

This document is a record of the views heard by the CAO team, and suggestions for next steps among the parties. These suggestions are intended to stimulate further ideas and options.

1.1. The complaint

On March 31, 2008 the CAO received a complaint on behalf of communities from the Department of León and Chinandega raising concerns about impacts to the health, environment, and livelihoods of community members, believed to be caused by the activities of the Nicaragua Sugar Estates Limited (NSEL), a client of IFC.

The complaint was screened for eligibility on April 18, 2008 and confirmation sent to the complainants and IFC project team in order for them to notify NSEL that the complaint met all three of the CAO's eligibility criteria for further assessment:

1. The complaint pertains to a project that IFC/MIGA is participating in, or is actively considering.
2. The issues raised in the complaint pertain to the CAO's mandate to address environmental and social impacts of IFC/MIGA investments.
3. The complainant (or those whom the complainant has authority to represent) may be affected if the social and/or environmental impacts raised in the complaint occurred.

The complaint raised a number of concerns of social and environmental issues, including:

- The association between NSEL's activities and Chronic Renal Insufficiency (CRI);
- Concerns relating to rights of association and restriction on the formation of a labor union;
- Labour conditions, including concerns of child labour, handling of chemicals, respiratory issues, and access to water and basic hygiene facilities; and
- Offsite environmental effects, including pesticide run-off to farms and impacts to indigenous Sutiaba lands, water competition and water contamination, and air pollution and associated respiratory problems as a result of sugarcane burning.

The complainants' concerns are based on information gathered from different sources and stakeholders such as a field investigation on water quality in the Department of Leon and Chinandega, administrative orders issued by local environmental authorities requesting NSEL to comply with national law and complaints (*denuncias*) from affected communities.

1.2. The project

The complainants reference an IFC loan, approved in October of 2006, of US\$ 55 million to NSEL for expansion and intensification of sugarcane cultivation and processing, including the construction of a plant to produce and export ethanol. The full investment includes a US\$ 25 million category A loan for IFC's own account, and a syndicated category B loan for up to US\$ 30 million.

According to the projects' Summary of Proposed Investment and Investment Review, NSEL was founded in 1890, and is one of the largest sugar mill in Nicaragua, and the leading sugar producers in Central America¹. It supplies raw and refined sugar to the domestic market in Nicaragua, and exports raw sugar to the world market, including the United States.

NSEL owns and operates the agro-industrial complex San Antonio Sugar Mill (*Ingenio San Antonio* or ISA), located in Nicaragua's Pacific Northwest with an effective capacity to process 16,000 tons of sugar cane per day. The company owns 11,000 ha of sugar cane that, together with the leased land, supply 70% of its needs, being the other 30% supplied by independent cane growers. ISA's principal activities include:

- growing, processing and commercialization of raw and refined sugars and by-products such as molasses and ethanol using approximately 24,222.81 Ha of cane field, of which 15,105.95 Ha is owned or leased land;
- production and sale of electrical energy to the national grid; and production of shrimp.

NSEL is owned primarily by the Grupo Pellas, one of the largest and more diversified conglomerates in Central America. They are based in Nicaragua with stakes, *inter alia*, in the energy sector, sugar, ethanol, automobile, banking, cable TV, health, and credit card companies².

As for policies and guidelines applicable for this project IFC referred in the Environmental and Social Clearance Memorandum that IFC had identified³ the following applicable policies and guidelines: a) under the new IFC policies and performance standards it was applicable PS1 – Social and Environmental Assessment and Management systems; PS2 – Labor and Working Conditions; PS3 – Pollution Prevention and Abatement; PS4 – Community Health, Safety and Security; PS5 Land Acquisition and Involuntary Resettlement; and PS6 Biodiversity Conservation and Sustainable Natural Resources Management; and b) under the guidelines it was applicable the Sugar Manufacturing Guidelines (July 1998); General Environmental Guidelines (July 1998); Occupational Health and Safety Guidelines (June 2003); Hazardous

¹ Summary of Proposed Investment (SPI) Project ID # 25331 22 September, 2006; PDS Investment Review Project ID # 15331 23 September, 2006.

² Summary of Proposed Investment (SPI) Project ID # 25331 22 September, 2006; PDS Investment Review Project ID # 15331 23 September, 2006.

³ Environmental and Social Clearance Memorandum (ESCM), October 25, 2006.

Materials Management Guidelines (December 2001); Plantations Guidelines (July 1998); and Pesticides Handling and Application Guidelines (July 1998).

2. CAO Assessment

2.1 Site visit itinerary

As part of its assessment process, a CAO Ombudsman team visited NSEL in Nicaragua, as well as communities in Leon and Chichigalpa to discuss their interest and perspectives on the issues raised in the complaint in June 2008. Additionally, the CAO Ombudsman team held meetings with other stakeholders to get a broad view of the situation and issues at stake. The itinerary was the following:

Monday, 23 June – Chichigalpa, Department of Chinandega

16:00 – 18:30 Drive from Managua to Chichigalpa.

18:30 – 20:30 Meeting with NSEL Executives: Mr. Alvaro Bermudez Castillo, Administrative Manager; Mrs. Zela Porrás Díaz, Legal Manager; Mr. Ariel Granera, Communication, Information and CSR Director; and Ms. Claudia Serrano, IT/Office of Communication.

Tuesday, 24 June – Leon, Department of Leon

9:00 – 13:00 Meeting with complainants and affected community leaders from Sutiaba communities of Goyena and Abangasca, ASOCHIVIDA, and community members of Chichigalpa.

Between leaders and community members, there were 15 people present at the meeting.

14:15 – 15:00 Drive from Leon to the communities of Goyena and Abangasca.

15:00 – 18:00 Meeting with members of Sutiaba Indigenous community, community members of Goyena and Abangasca, and complainants.

Approximately 30 people were present at the meeting.

18:00 – 18:45 Return to Leon.

Wednesday, 25 June – Chichigalpa, Department of Chinandega

Parallel meetings were held in the morning hours of Wednesday with different stakeholders. The CAO Ombudsman team was divided in order to participate on both.

9:00 – 13:00 Meeting with NSELs' staff: Dr. Félix Zelaya; Dr. Mauricio Jarquín; Dr. Alejandro Marín; Engineer Ramón Sánchez; Engineer Luis Cepeda; Engineer Luis Enrique Martínez; Engineer Ivette Reyes; Mr. Norman Meza; Mr. Ariel Granera; Ms. Claudia Serrano; Mrs. Zela Porrás; and Mr. Álvaro Bermúdez.

During this meeting a detailed visit was conducted to NSEL hospital, school facilities and company's installations.

9:00 – 10:30 Meeting with Mayor of Chichigalpa, Mr. Wilfredo Rostran.

11:00 – 13:00 Meeting with Former Mayor of Chichigalpa, Mr. Victor Sevilla.

14:00 – 17:30 Meeting with members of ASOCHIVIDA.

100 people participated in this meeting, including residents of Chichigalpa, former NSEL employees, widows from former NSEL employees that have died of CRI, and their children.

19:00 – 20:30 Meeting with the President of the Sutiaba Indigenous Community, Mr. Roger Mario Montoya.

Thursday, 26 June – Leon, Department of Leon

9:00 – 10:00 Meeting with Mobile Clinic Project, Mr. Octavio Perez, and Director of the ISALIS-Leon.

11:00 – 12:30 Meeting with Engineers from the Institute of National Forestry (INAFOR), Mr. Ramiro Velazquez Lanuza, Mr. Oscar Toruño Espinoza, and Mr. Pedro José Ramirez Centeno.

12:45 – 14:00 Wrap up meeting with complainants.

14:30 – 16:00 Meeting with Leon officials from the Ministry of Environment and Natural Resources (MARENA), Mrs. Yaniree Alvarez, Municipal Director; Mr. Cairo Díaz, Environmental Inspector; Mr. Carlos Ruiz Vasquez, Legal Advisor; Mrs. Carmen Carillo, Environmental Technical Advisor; and Mr. Oswaldo Tellez, Environmental Department Coordinator.

16:00 – 18:30 Return to Managua

18:30 – 19:30 Meeting in Managua with the Procurator's Office, Mr. Hernán Talavera Corea, Executive Secretary of the Inter-institutional Investment Commission.

Friday, 27 June – Managua

8:30 – 11:30 Discussion with NSEL staff in Managua: Mr. Alvaro Bermudez Castillo, Administrative Manager; Mr. Joaquin Zavala, Vice Executive Director; Mrs. Zela Porras Díaz, Legal Manager; Mr. Ricardo Barrios, Financial Director; Mr. Tito Silva, Agro-industrial Manager; Mrs. Katya Gómez de Rappacciolo, Financial Resources Manager; Mr. Ariel Granera, Communication, Information and CSR Director; and Ms. Claudia Serrano, IT/Office of Communication.

2.2 Findings

Based on discussions and information received during the assessment period from affected communities' members, ASOCHIVIDA, complainants, NSEL staff and IFC, the issues explained in the complaint to the CAO appear to fall within four topic areas, elaborated below.

Before stating the findings, it is important to underline that there is not a general rejection to the presence of NSEL in the areas of Leon and Chinandega, but rather there is an expressed desire to work together in solving or mitigating mutual concerns.

Topic area 1: Issues related to the work force of NSEL, health impact by CRI and working conditions

The issue of CRI was raised by members of an association named ASOCHIVIDA, which represents approximately 1,000 people that are either affected by CRI or are kin of affected individuals, among them women and children. Some in this group state that they would like to see NSEL be more responsive to the CRI issue affecting people that have worked for several years for the company and have become ill; some believe that they have been dismissed after the chronic condition began to affect their health. Others express that they would like to see proper support from NSEL towards the families of those affected by CRI. They state that once diagnosed with CRI their health starts to deteriorate significantly over approximately 6 years. Many in the group express they would like to know what causes the disease in order to avoid future generations from suffering the same harm.

NSEL recognizes how difficult this issue is for individuals, families, the community, and the Company itself. They affirm that they were the first to know and raise awareness of how CRI was affecting their work force. They note that there are no studies at the moment proving the existence of a direct causal link between sugar mill activities and CRI. From their perspective, even when the causes are unknown, they have been and are currently investing in significant efforts to support their work force affected with CRI by providing medical and hospital assistance. Furthermore, NSEL expressed that they will be willing to support serious and systematic research to find out the causes of this chronic condition.

According to all stakeholders met during the field trip, there is a wide social concern in the region regarding CRI and how it is affecting a large number of people and families, both within the areas of operation of NSEL, and more widely. There is a broad acknowledgment that in the last few years a number of associations and organizations have been formed to advocate for this matter, and different research efforts have been initiated to find out the causes without achieving conclusive findings. ASOCHIVIDA, represents many people and families affected by this chronic illness. An important question now is how this issue can be address properly both in the short and in the longer-term to provide the adequate medical support for those who have been impacted by CRI, and how to prevent it.

Topic area 2: Issues related to environmental impacts, and water quality and distribution

(Members of Sutiaba Indigenous community and community members of Goyena and Abangasca)

The community members raise the issue of water quality and environmental impact. They cite issues such as air contamination as a consequence of cane burning, which they believe has resulted in some cases of pneumonia and respiratory difficulties. Additional examples regarding the water quality included changes in the texture and odor of the water. In the last few years, they believe that some of their livestock have aborted as a consequence of drinking contaminated water waste coming from NSEL activities; members of the community state that they have presented formal complaints before legal local authorities to resolve some of these issues⁴. On water distribution,

⁴ Formal complaints against NSEL were presented before the local representative of the Ministry of Environment and Natural Resource (MARENA), the Ministry of Animal Husbandry and Forestry (MAGFOR), and the Environmental Procurator Office.

community members express the difficulties they have had to access water for their farms, emphasizing that some of the water wells have little water volume compared to the levels present 6 or 7 years ago. From their perspective the company does not act diligently regarding usage of water, resulting in residents suffering from shortages.

NSEL notes that on a frequent basis the quality of water is tested through independent and specialized processes. They state there are no reports showing that NSEL activities are contaminating potable water, plus from their point of view the practices used in their activities are equivalent to the practices implemented in other sugar mills around the world. In the same line of practices, they state that they use small dosages of fertilizers and herbicides with no contaminating effects or harm. NSEL manifest openness in trying to explain to the affected communities what it is being tested and how it is done. They also express openness about bringing an independent and professional third party to run the tests. From their perspective it appears positive to improve communication with residents of areas where they operate. As for water competition, NSEL believes that there is plenty of water. They state that water wells have been used for over 30 years, and have maintained the same water level. NSEL expresses that they would like to improve and achieve a more efficient usage of superficial water, which would otherwise simply flow into the sea.

In addressing the issue of the water quality and distribution, NSEL is willing to consider options that would enhance the communities' usage of water in general. This topic would require discussion about the involvement of environmental regulators, in coordination with other relevant national and local government institutions.

Topic area 3: Issues related to grievances raised by community members and leaders living in the surrounding areas of the ISA

Residents of communities in Goyena and Abangasca, as well as some residents of Chichigalpa raise the issue of the difficulties they encounter when they need to discuss any day-to-day issue with NSEL. Some within the group provide examples of those difficulties. They explain that NSEL's property lacks fences that would prevent their livestock from entering NSEL's property. When the livestock enters NSEL sugar plantations some residents have found it difficult to have their animals released. They explain that it involves the presentation of the animal's birth-certificate to prove ownership, plus the payment of certain amount of money to symbolize a fine. Another example of the day-to-day issues they encounter is related to the sugar cane burning process. From their perspective it is disturbing that the fire and burning process takes place in the proximities of their houses, which they believe causes the residents' respiratory problems, affects their livestock, and affects the environment overall. Additionally, community members explain the difficulties they have had with NSEL's security system, which on occasion has escalated very quickly rather than being resolved on the spot.

NSEL state that there are common issues they have to face with residents, and they express openness to improve their interaction with the community. In the last year, in order to address some of those issues, they hired people from the communities of Goyena and Abangasca to work in the company's security forces. Plus, they have hired a full time employee dedicated to work on these matters, and he has initiated a process to register grievances. From their point of view, there is space for improvement, and they welcome support to improve and strengthen the interaction with the communities in their areas of operation, and their existing mechanisms to address grievances.

Topic area 4: Land acquisition in relation to the Sutiaba communities of Goyana and Abangasca

Some members of the Sutiaba communities in Goyana and Abangasca have expressed concern over the usage and acquisition of land they believe belongs, under royal title, to the Sutiaba indigenous community. The territories concerned are expansive, covering a broad area to the west of, and including part of, Leon. The NSEL facilities are one of many private as well as public entities that have purchased or occupied land over the last century that falls in this category. Sutiaba communities disagree about which authority has the right to approve the sale and lease of Sutiaba land, and surveillance of contractual commitments. In this context, some Sutiaba community members are petitioning for reform at the National Assembly and elsewhere.

NSEL has responded that it believes its practices of land acquisition are fully compliant with accepted legal norms in Nicaragua. It is concerned about the precedent of opening negotiations on land and does not believe this is appropriate. NSEL is therefore not willing to enter negotiations on land issues outside of the formal legal process.

Topic area 5: Labor and working conditions

Former workers of NSEL raised concerns over the possibility to exercise their rights of association within the company's work force. In May 2008 an agreement between former employees and the Company was reached on this particular matter.

Complainants raised the following concerns about labor conditions at NSEL:

- Access to lavatory facilities and water is restricted;
- Access to appropriate safety equipment and protection from agrichemicals is not sufficient;
- Labor conditions result in dehydration and exhaustion.

NSEL has provided documentary evidence to the CAO in response to each of these concerns, and has explained its supervision of worker health and safety.

Topic area 6: Issues related to the IFC

The NSEL complaint raises multiple concerns and questions about IFC's due diligence and appraisal processes with respect to application of its social and environmental policies. One approach may be for IFC to respond to these assertions line-by-line. However, this is likely to result in an adversarial outcome. CAO's suggestion is to address these concerns substantively through a process of enquiry, one which seeks to identify opportunities for improved engagement between IFC, the Sponsor and host communities. We urge representatives from IFC's due diligence team to meet with community representatives under the auspices of the CAO to discuss these procedures, explain how decisions are made, and seek a better understanding of opportunities to improve. Based on the issues raised in the complaint, this meeting should include discussion of the following topics:

1. Better understanding of how IFC social and environmental appraisals are done.
2. Clarification of which standards apply, and rationale for their inclusion/exclusion: particularly the case with IP's.

3. What are opportunities to improve local awareness of IFC's involvement in the project, disclosure and consultation with affected communities?
4. What can be done when issues are not identified in the Impact Assessment?
5. Are there opportunities to increase transparency and participation so that locally affected people are able to understand impacts and mitigation efforts by the project better?

This meeting could be held at a neutral location in Nicaragua under agreed ground rules for participation, and with facilitation provided by the CAO.

3. Next Steps

Our understanding leads us to identify three common objectives relating to the various stakeholders' needs to:

- identify the causes of CRI and receive appropriate support to address the effects of the disease affecting the community around the San Antonio Sugar Mill;
- discuss options to monitor water quality, and distribution within a trustworthy process; and
- enhance the existing mechanisms to address worker as well as community grievances.

In addition to these three objectives, which relate directly to the NSEL as the Sponsor, CAO proposed to convene a meeting between IFC and local community leaders to address the procedural concerns raised in the complaint (see Topic 4 above).

The proposed framework

To achieve those common objectives, which address topic areas 1, 2 and 3 explained above, we propose three themes, which should be implemented over a 6 month period starting on November 16, 2008.

Theme 1: Addressing concerns in relation to CRI. There are two approaches that stakeholders spoke with us about: (a) opportunities to assist the parties in identifying the causes of CRI through a credible study; and (b) exploration of options of support to communities that are afflicted by CRI.

a) Identifying causes

Currently, there is no conclusive study that helps to understand the causes of CRI. Both NSEL and community groups such as ASOCHIVIDA appear to want such a study, but have been clear that any study must be trustworthy and credible to them and their stakeholders. Neither party wishes to embark on a study only to find that it is not fully accepted by the other.

Under these circumstances, CAO proposes to help parties jointly define the criteria or principles a study on CRI causes must have for its outcome to be trustworthy. The parties should be willing to discuss what kind of feasible solutions would address the study's outcome. In addition, CAO will encourage both parties to consider which other stakeholders must be involved in this process to ensure that it is fully effective.

The above will ensure that: (a) both parties are able to express what criteria would make them feel confident that credible results on the causes of CRI can be reached; and b) both views are appropriately taken into account when exploring possible research under progress. A key outcome of this part of the theme is identification of the terms a study must have to ensure that both parties are bound by its final conclusion on the causes of CRI.

There may be existing studies or initiatives within Nicaragua or in the region that will meet the criteria for credibility identified by these stakeholders. CAO will identify whether there are existing academic and health institutes which may have expertise

and credibility in this field. Ideally, it may be possible to identify an existing local research facility that can become the focal point for this work.

b) Options for support to local communities where there is a prevalence of CRI

It is accepted that CRI has high prevalence among communities local to the San Antonio facility. NSEL seems to have medical facilities and services which provide a level of care and assistance to workers, and other members of the community. In addition, local government health authorities also provide public health services. Based on CAO's discussions with these private, public and community stakeholders, there is clearly concern about appropriate opportunities to enhance support to families that have been impacted by CRI, including widows and children of those individuals affected by this chronic condition. This may take the form of further collaboration between the public health agencies and NSEL to ensure better services. Additionally, there is interest in understanding what additional support could be effective to those that are most in need.

CAO proposes that it convenes discussions between NSEL, local health providers and affected community members to explore these options in more detail and make recommendations for improvements.

Theme 2: Addressing concerns over water quality and quantity (November 2008)

All stakeholders mentioned access to water as an important priority.

On the one hand, community members expressed their concerns about perceived impacts of NSEL activities on water quality and quantity in the area. On the other, NSEL believes its water management processes meet appropriate standards, preventing pollution and ensuring sufficient water flows for community needs.

No information, trustworthy to all stakeholders, seems to be available to determine potential impacts of NSEL activities on water quality or on the water quantity needed to ensure resilience of river basins.

Furthermore, no public decision-making mechanism seems to be in place to build multi-sector consensus on key water management aspects, such as land use planning, equitable allocation of water resources, pricing, and subsidies.

Under these circumstances, CAO proposes that claims over water pollution and access are discussed with the ultimate goal to build a trustworthy process. The CAO suggests, as one option, a framework of an integrated water resources management⁵ (IWRM) process for the basins where NSEL operates.

CAO considers that the process could be convened and lead by the Ministry of Environment and Natural Resources (Ministerio del Medio Ambiente y Recursos Naturales/MARENA), in tight coordination with other relevant national and local

⁵ According to the Global Water Partnership, IWRM is "a process which promotes the coordinated development and management of water, land and related resources, in order to maximize the resultant economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems." An IWRM approach is an open, flexible process, ensuring access to relevant information, bringing all stakeholders across the various sectors that impact water resources to the table, and applying effective and efficient decision-making mechanisms to set policy and make sound, balanced decisions in response to specific water challenges faced.

government institutions. Should there be an expression of interest from all stakeholders, and especially from governmental authorities, CAO is willing to provide some technical and financial support to design and begin to conduct an IWRM process. Yet, successful implementation requires a long-term commitment from government and other stakeholders to provide financial and human resources support.

CAO believes that government institutions, local communities and NSEL would highly benefit from such an approach. CAO would also like to explore NSEL's willingness to act as a co-funder of this initiative, which could serve its interests in two ways: helping strengthen NSEL's relationship with neighboring communities and ensuring good, cheaper and dispute-free access to water for its business. Annex 1 contains a list of criteria for successful IWRM processes.

The CAO understands that both parties have agreed that they are willing to discuss options for implementation of a trustworthy process that addresses the concerns relating to water quality and quantity.

Theme 3: Strengthening the mechanism to address grievances (November 2008)

The CAO has grouped worker conditions and community grievances in this section. With respect to worker conditions, the CAO suggests that:

- NSEL shares information on worker conditions, expected norms, and supervision with the complainants;
- NSEL considers opportunities to improve and enhance worker conditions and supervision, reporting back to the parties on an agreed timetable.

With respect to local community grievances the CAO suggests that NSEL attend a meeting with villagers, mediated by the CAO. Specifically, Goyena and Abangasca communities raised the following specific concerns which should be the topics for discussion:

- Burning of sugarcane;
- Use of security forces by NSEL;
- Actions taken by NSEL in the event of livestock trespassing on its land;
- Concern about crop damage as a result of agricultural activities.
- Maintenance of a buffer zone between sugar cane and community land.

In addition to this facilitated meeting, CAO will share with NSEL and local stakeholders the Spanish version of an Advisory Note from CAO, "A Guide to Designing and Implementing Grievance Mechanisms for Development Projects". CAO is willing to provide a short training workshop on grievance mechanisms to support NSEL's efforts, and further support to implement it.

4. Implementation of proposals towards resolution

Progress on these three themes would address the issues raised by community members to NSEL and CAO. These proposals have been shared with all parties, and feedback has been inserted in the final version of the document.

The present document intends to be a framework agreement or Memorandum of Understanding under which parties agree to start discussions on the three themes. The time frame to reach a work plan is currently 6 months; however parties may decide that additional time is necessary to reach the identified common objectives. CAO maintains flexibility on the time frame to work on each one of these proposals. Within this Framework Agreement, stakeholders confirm their intention of reaching and implementing a further detailed work plan as part of this process.

On November 18, 2008 the CAO's Ombudsman assessment process will be close to allow implementation of the proposed next steps.

Annex 1 List of criteria for successful IWRM processes

- IWRM should be applied at catchment level. The catchment is the smallest complete hydrological unit of analysis and management. Integrated catchment management (ICM), therefore, becomes the practical operating approach. Although this approach is obviously sound and finds wide acceptance, too narrow an interpretation should be avoided. This alternative viewpoint is dealt with in Section 4.3 (Integrated Urban Water Management).
- It is critical to integrate water and environmental management. This principle is widely and strongly supported. IWRM can be strengthened through the integration of Environmental Impact Assessments (EIA's), water resources modeling and land use planning. It should also be understood that a catchment or watershed approach implies that water should be managed alongside the management of codependent natural resources, namely soil, forests, air and biota.
- A systems approach. A true systems approach recognizes the individual components as well as the linkages between them, and that a disturbance at one point in the system will be translated to other parts of the system. Sometimes the effect on another part of the system may be indirect, and may be damped out due to natural resilience and disturbance. Sometimes the effect will be direct, significant and may increase in degree as it moves through the system. While systems analysis is appropriate, analyses and models that are too complex to be translated into useful knowledge should be avoided.
- Full participation by all stakeholders, including workers and the community. This will involve new institutional arrangements. There must be a high level of autonomy, but this must at the same time be associated with transparency and accountability for all decisions. Care should be taken to ensure that those participating in any catchment management structure do indeed represent a designated group or sector of society. It is also important to ensure that representatives provide feedback to the constituencies they represent. IWRM seeks to combine interests, priorities and disciplines as a multi-stakeholder planning and management process for natural resources within the catchment ecosystem, centered on water. Driven bottom-up by local needs and priorities, and top-down by regulatory responsibilities, it must be adaptive, evolving dynamically with changing conditions.
- Attention to social dimensions. This requires attention to, amongst other things, the use of social impact assessments, workplace indicators and other tools to ensure that the social dimension of a sustainable water policy is implemented. This will include the promotion of equitable access, enhanced role of women, and the employment and income implications of change.
- Capacity building. At many levels in the process – even at the governmental level - stakeholders lack the necessary knowledge and skills for full application of IWRM. Community stakeholders may not be familiar with the concept of water resource management, catchment management, corporate governance, and their role in these. The water stakeholders must, therefore, collaborate in designing and implementing strategic elements of capacity building as part of the evolving IWRM process. Capacity building categories include education and awareness raising about water; information resources for policy making;

- Availability of information and the capacity to use it to make policy and predict responses. This implies, firstly, sufficient information on hydrological, bio-physical, economic, social and environmental characteristics of a catchment to allow informed policy choices to be made; and secondly, some ability to predict the most important responses of the catchment system to factors such as effluent discharges, diffuse pollution, changes in agricultural or other land use practices and the building of water retaining structures. The latter hinges on the adequacy of scientific models: Models should be as complex as the problem requires and no more so. It is recognized that predicting ecosystem response to perturbation with reasonable confidence is severely taxing current scientific capabilities, stimulating ongoing research.
- Full-cost pricing complemented by targeted subsidies. This principle was strongly urged by the World Water Council at The Hague, the rationale being that users do not value water provided free or almost free and have no incentives to conserve water. Wide support for this principle was engendered, but also significant opposition from those who felt that the interests of the poor might not be sufficiently protected, even under an associated subsidy system, however well designed. Opposing views held that full-cost pricing, when applied in its narrowest sense, offends the principle that water is a public good, a human right, and not simply an economic good. Reiterating: The economic sustainability of water and sanitation services depends largely and appropriately on the recovery of costs through user fees or tariffs that are equitably assigned based on ability-to-pay.
- Central government support through the creation and maintenance of an enabling environment. The role of central government in ICM should be one of leadership, aimed at facilitating and coordinating the development and transfer of skills, and assisting with the provision of technical advice and financial support, to local groups and individuals. Where specific areas of responsibility fall outside the mandate of a single government department, appropriate institutional arrangements are required to ensure effective inter-departmental collaboration. Effective IWRM is a top-down meets bottom-up process.
- Adoption of the best existing technologies and practices. This includes management instruments. Professional associations like IWA are primary sources of knowledge on BMPs (best management practices), and BAATs (best appropriate affordable technologies). Multi-stakeholder, consensus-oriented forums for IWRM should avoid lowest-common-denominator solutions through adherence to BMPs and BAATs that are adaptive to local needs.
- Reliable and sustained financing. In order to ensure successful implementation of IWRM approaches, there should be a clear and long-term commitment from government to provide financial and human resources support. This is complemented by income from a healthy water and sanitation market, especially when local providers of goods and services that support the water sector are active players, and when there is active reinvestment in the sector.
- Equitable allocation of water resources. This implies improved decision-making, which is technically and scientifically informed, and can facilitate the resolution of

- conflicts over contentious issues. There are existing tools (e.g. multi-criteria analysis) to help decision-making in terms of balancing social, ecological and economic considerations. These should be tested and applied.
- The recognition of water as an economic good. The recognition of water as an economic good is central to achieving equitable allocation and sustainable usage. Water allocations should be optimized by benefit and cost, and aim to maximize water benefits to society per unit cost. For example, low value uses could be reallocated to higher value uses such as basic drinking water supplies, if water quality permits. Similarly, lower quality water can be allocated to agricultural or industrial use.
 - Strengthening the role of women in water management. A review by the World Bank of 121 water projects showed that ensuring women's participation in decision-making positively affects both project quality and sustainability.