Netherlands Commission for
Environmental Assessment

Second Advisory review of the ESIA for the Kisii-Nyamira Water Supply & Sanitation Project - ORIO11KE21

KENYA

18 June 2019
Ref: 7270

Advisory Report by the NCEA

To	Netherlands Enterprise Agency (RVO)
Attn	Ms Sylvie Sprangers
From	The Netherlands Commission for Environmental Assessment (NCEA)
Date	18 June 2019
Subject	**Advisory review of the ESIA for the Kisii-Nyamira Water Supply & Sanitation Project, Kenya** By: Working group of the Netherlands Commission for Environmental Assessment: Ms Tanya van Gool (Chair) and Mr Arend Kolhoff (Technical secretary) Quality control by: Mr Rob Verheem
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1. Introduction

The project initiative

The Kisii-Nyamira Water Supply and Sanitation Project is a project located in the South-West of Kenya. It covers both the Kisii & Nyamira county (see Annex 1 for a map of the project area) rural areas that are characterised by a densely populated mountainous landscape. The proponent for this project is the Lake Victoria South Water Services Board (LVSWSB). This Board operates under the supervision of the Ministry of Water & Irrigation of the Republic of Kenya.

Presently only 10% of the residents in both Kisii and Nyamira are connected to a piped network. People in both counties rely on rivers, shallow wells, springs, dams, pans and boreholes the availability of which varies considerably between seasons as well as across regions depending on the time of the year.

The main objective of this project is to improve the access to drinking water for 360,000 people in 2020, 436,000 people in 2030 and ultimately about 528,000 people in 2040 in the Nyamira and Kisii counties. As a result of better access to domestic water of drinking water quality the project aims to contribute to the improvement of the sanitation and health situation and economic empowerment.

The Lake Victoria South Water Services Board has asked the Netherlands Enterprise Agency (RVO) for funding. The project consists of:

- The Bonyunyu Dam that has a maximum height of 18.4 meter, is made of earth and with a length of about four hundred meters, located at an altitude of 1860 meter in the upstream part of the Gucha River that is discharging into Lake Victoria;
- A reservoir with a maximum length of about 3.5 km and a width varying from about 300 to 500 hundred meters;
- Water treatment plant;
- Hydropower plant;
- Relatively small water reservoirs or tanks made of reinforced concrete will be established;
- Pumping facilities and generators are installed as a back-up when electric power supply fails;
- Distribution network of pipelines;
- Training of staff (GWASCO & WRMA).

With costs eligible for ORIO funding, a grant/loan of 130 million Euro is asked for by the LVSWSB to realise the project objectives. BAM International, responsible for the preliminary design of the project, has hired Gauff, an international consultancy firm to execute the Environmental and Social Impact Assessment (ESIA)[1]. RVO requires that an ESIA is available to support decision making on the funding of this project. Moreover, the IFC Performance Standards, indicated by RVO as their reference framework, explicitly require an ESIA in order to support decision making.

[1] The term Environmental and Social Impact Assessment (ESIA) is used by RVO to emphasise that social aspects are included.

Approach taken by the NCEA

The objective of the ESIA is to provide information for well-informed decision making by RVO. The main purpose of an advisory review report prepared by the NCEA is to give advice on the quality of the ESIA report and process. This advice was prepared by a working group of experts acting on behalf of the NCEA. The group comprises expertise in the following disciplines: hydrology, ecology, civil engineering, social impacts and resettlement procedures. See Annex 2 for the composition of the working group.

In May 2018, the Netherlands Commission for Environmental Assessment (NCEA) was asked by RVO to review the first version of the ESIA report that was received on June 19. In the period June – July 2018 the NCEA reviewed the following version of the ESIA report:

- Kisii-Nyamira Water Supply and Sanitation Project, Environmental and Social Impact Assessment (June 2018).

The NCEA reviewed the ESIA report complemented with information received during the site visit to Kenya 3-6 July 2018. A draft of this advisory report was discussed with RVO on 20 July 2018. The review resulted in a first advisory report submitted to RVO 6 September 2018.

Based on this first advisory review the ESIA has been adjusted. In November 2018 RVO requested the NCEA to review the adjusted ESIA. The emphasis in this second review was on assessing whether NCEAs advice from the first review has been addressed sufficiently in the adjusted ESIA. In the period February – April 2019 the NCEA reviewed with the same working group of experts the latest version of the ESIA report:

- Kisii-Nyamira Water Supply and Sanitation Project, Environmental and Social Impact Assessment (October 2018).

In addition, the NCEA has reviewed the following supplementary information to better understand the information provided in the ESIA report:

- Kisii Geotechnical Report;
- Kisii Hydrology Report;
- Kisii Topographical Survey Report;
- Institutional Organisational Development Plan;
- Resettlement Action Plan (RAP) Report October 2018 Rev.

For the review of the ESIA report the NCEA has made use of the following reference framework:

- Kenyan Laws and Regulations concerning Environmental Assessment, mandated by the National Environmental Management Authority (NEMA) of Kenya;
- The IFC Performance standards (IFC PS);
- International Good Practices such as the World Bank policy document OP 4.37 Safety of dams and procedures BP 4.37 (incl. Annex A: Dam safety reports).

A draft of this advisory review report has been discussed with RVO 14 June 2019.

Reading guide

In chapter 2 the main findings of the working group are presented and explained. The NCEA considers the shortcomings identified in this chapter as essential for informed decision-making on the project. In chapter 3 the detailed findings are mentioned and explained. Shortcomings described in this chapter need to be addressed in order to comply with the IFC-PS.

2. Main findings

In the first advisory report prepared by the NCEA (5 September 2018) seven main shortcomings in the ESIA (June 2018) were identified. Based upon this advisory review an adjusted ESIA (October 2018) was submitted and has been reviewed by the NCEA.

The NCEA concludes that compared to the earlier ESIA (June 2018), the latter ESIA report has been improved considerably. It provides more information and some of the seven shortcomings identified in the earlier ESIA have partly been addressed. However, none are completely and adequately remedied. In conclusion, this ESIA still contains major flaws. Only one of the relevant IFC performance standards has been met in full.

The main shortcomings are as follows:

- Institutional tasks and responsibilities: the division of roles, tasks and responsibilities of the involved organisations are now given attention in Sections 14 and 15 but there is no comment on their financial capacity to fulfil these roles;
- Borrow areas, including quarries, access roads and the construction camp: quarry locations are identified and mapped. However, without specifications of the material properties required and without (an estimate of) the quantities of these materials available at the respective locations, the risk is that more borrowed land for quarries may be required, including related land acquisition and possible resettlement as well as additional cost. Furthermore, the ESIA defers identification of the construction camp and its related ESIA to a later date (Section 2.10), information which needs to be included in the ESIA;
- Site selection of treatment plant; The site of the treatment plant is not adequately justified, and an alternative probably more suitable site is not taken into consideration in the ESIA;
- Availability of water: more information has been provided on the expected water availability and supply reliability. The ESIA elaborates on the effect of possible changes in water availability but does not include an assessment of how these could affect water availability. Also, the developer did not do any recent measurements on flow which could have improved the accuracy of the analysis;
- Safety of the dam: The impact of earthquakes on the stability of the dam has been covered adequately for this stage of project development. Extreme rainfall data inside the catchment area and subsequent flood discharge data collection (incl. design flood hydrographs) and analysis have not been covered due to the total lack of precipitation data within the catchment of Bonyunyu Dam;
- Sediment load and lifetime of the reservoir: a more elaborate analysis is made of sediment inflow, but the assumptions and calculations for the flushing procedures are possibly too optimistic. More analysis is needed on the typology of the sediments and the sedimentation process in the reservoir, to be able to design an adequate flushing device and procedures, if at all possible;
- Downstream effects and environmental flows: most of the shortcomings have been remedied. The effects of the project on fish that presently passes the dam site are not studied nor the possible need for a fish ladder;
- Socio-economic aspects: Although a RAP has now been presented, both this and the ESIA still lack substantial information on socio-economic aspects of the people affected.

These issues are further elaborated here below.

Institutional tasks and responsibilities

As noted in the previous advisory report, the contractors are assigned more responsibilities than acceptable to the IFC PS. This is not addressed adequately in the revised ESIA. Furthermore, the ESIA remains silent on the degree of awareness of the involved organisations as to their specific roles and relationships to the project, and their financial capacity to deliver.

It is recommended that a revised ESIA:

- Meets the standards on sharing of responsibilities between the proponent/authorities and (sub-)contractors as described in the IFC PS 1.
- Provides evidence of consultations at appropriately senior management level regarding financial obligations to the project; and assesses the financial capacity of the institutions to deliver on such.

Borrow areas, including quarries, access roads and the construction camp

Borrowed areas, which include quarries that provide for example sand, clay and boulders for the construction of the dam as well as access roads and the construction camp, are integral to the proposed project and full information should be provided in the ESIA. However, essential information on borrowed areas is still missing, in particular relating to the temporary or permanent nature of possible land acquisition and related impacts. In the current ESIA, information is provided on quarries (the locations of which are identified) but not regarding other sites and the matter of possible land acquisition is postponed.

It is recommended that the following aspects of potential borrowed land are assessed:

- Specific location of the Construction Camp and all access roads to the quarries;
- As in all potential areas of land acquisition, a Land Use map and statistics regarding the Project Affected Persons (PAPs);
- The possible need for involuntary resettlement needs to be explained and, if relevant, elaborated in the RAP;
- Possible positive and negative direct and indirect impacts related to the sites and mitigating measures;
- Operation and management of all the sites to be elaborated in the ESMP, not just relating to quarries (Section 2.9);
- With regard to the quarries: for each of the materials that will be used during the construction of the infrastructure and in particular the dam, the ESIA should provide an estimate of the quantities of each of the materials in order to establish whether the proposed quarries / access roads are sufficient for purpose;
- In case of resettlement or compensation these aspects need to be elaborated in the RAP;
- Develop a grievance mechanism for all issues emerging, which is in line with IFC PS1.

Site selection of treatment plant

According to the ESIA, the proposed site of the combined water treatment plant/pumping station/hydropower plant is approximately two kilometres downstream of the proposed dam site. This site is not justified nor compared with a site in the direct vicinity of the dam site. The NCEA noticed that the hydropower plant at the proposed site may generate less electricity as compared to a site close to the dam, because the water to the hydropower station will be transported through an almost horizontal pressure pipe at a length of about 2

km, causing friction and loss of energy as well as water hammer surges. These phenomena will particularly be the case if more of the excess flow from the reservoir would be used to generate electricity.

It is recommended that a comparative assessment will be made of the proposed site and possible sites close to the dam by making use of at least the following criteria: electricity production, access to the grid, use of energy costs for pumping of drinking water.

Availability of water

The project aims to provide drinking water for 528.000 people in Nyamira and Kisii county. The ESIA includes a water balance calculation that shows that the dam would secure reliable water supply given this demand. The water balance and analysis is based on a simple hydrological rainfall-runoff model and compared with limited historic data of flows. Possible effects of land cover change during the last decades were considered and reflected on sufficiently. There are some limitations in this analysis that need to be highlighted:

- The lack of recent data on flows at the dam site is something the developer could have easily and cheaply mitigated by installing a gauging station or at least by means of a few manual flow measurements during the year. This would certainly have helped to gain more confidence in the water balance calculations;
- The hydrological model shows insufficient performance in reproducing the historic observed data, probably due to a combination of poor rainfall data and other input data, and the choice of the hydrological model;
- The ESIA reflects on possible climate change impacts and future land cover change (urbanisation, intensive agriculture) affecting runoff negatively (faster runoff, increased erosion, etc) but does not include a scenario that considers these future changes. Now it is not clear how these changes affect the viability and water supply reliability of the project.

Recommendation: Due to the expected combined effects of climate change and future land use change in the upper basin, there is a risk that water availability cannot be secured on the long term. It is therefore recommended that the ESIA also provides a scenario that considers these expected changes.

Safety of the dam

The safety of a dam and the population living downstream of the dam is determined by the following main factors: design, construction and management of the dam, seismicity (risk and magnitude of earthquakes) and the risk of overtopping. The risk of seismicity is adequately addressed for this phase of development of the project (preliminary design) . The risk of overtopping is still inadequately addressed in the ESIA. No (design) flood hydrograph has been established and no flood routing has been carried out for the design flood hydrographs and a range of exceedances probabilities, applying the adopted reservoir and spillway characteristics are not described.

The proposed dam is an earth dam. These structures are more vulnerable to overtopping than dams made from concrete or rock fill. Serious overtopping of an earth dam can result in bursting of the dam after a few hours. To avoid overtopping, it is therefore important to know the Probable Maximum Flood (PMF) value that need to be used as a design criterion for the construction of the dam (height and robustness) and the spillway.

In the ESIA it is claimed that "the PMF is widely accepted as equivalent to the 1:10,000-year flood estimate value". This is a disputable statement as the probable maximum precipitation – probable maximum flood PMP-PMF approach is rather different from the extrapolation of precipitation or discharge series to a magnitude of 1:10,000 year. Reference to the "Manual on Estimation of Probable Maximum Precipitation (PMP), World Meteorological Organisation, WMO-No. 1045, ISBN 978-92-63-11045-9, issue 2009. In various countries with many dams the magnitude of the 1:10,000-year flood inflow is adopted to be about 0.5 PMF inflow. For example, the UK standards require the larger value of the two approaches to be adopted for design purposes. These UK standards do not suggest that only one value (in this case the 1:10,000-year inflow) would be sufficient.

Management of the dam requires skilled management and clear protocols. The management of the dam needs to be elaborated in the operation, maintenance and surveillance manual for the dam. This manual however is not a requirement of an ESIA.

It is recommended to:

- Substantiate what influence this PMF has on the height, the robustness of the dam and the design of the spillway. Possible adjustments to the dam design and spillway need to be described and presented in the ESIA;
- Justify the PMF and explain how it meets the recently approved Kenyan standard. The PMF might have an influence on the height, the robustness of the dam and the design of the spillway.

Sediment load and lifetime of the reservoir

The ESIA now includes a more elaborate analysis of the sediment yield of the catchment entering the reservoir and the predicted sedimentation rate of the reservoir. The calculations show that the dead storage capacity will be filled up in around 7 years. The analysis has been done adequately, given the lack of data on erosion and sediment loads. From the analysis the NCEA concludes that there is a considerable risk that the reservoir loses its capacity and thus will lose (part of) its function. Also, given the data limitations for the analysis done, NCEA believes that it is certainly possible that the calculations underestimate this risk.

The ESIA proposes as mitigation measures several upstream catchment management interventions to reduce erosion and sediment yield. But this being a difficult process to control that requires the involvement of many actors is expected not to be enough. As an additional mitigation measure the flushing facilities and procedures of the reservoir are proposed. As a general remark, it needs to be stressed that sediment flushing is an extremely challenging engineering problem which is not always possible and effective.

The NCEA is of the opinion that the solution/mitigation measure proposed for sediment flushing is inadequate. In the view of the NCEA, flushing of sediment requires a lower level bottom outlet or a (separate) larger gated outlet to be (possibly) effective. The presently designed outlet conduit might be used for release and (some) flushing of sediment that has accumulated very close to the outlet structure. As a sediment flushing device to really extend the lifetime of the reservoir this outlet is not expected to be effective.

In the ESIA it is recommended to flush at least once every two years during high flows and to further work out the procedures and design during the final design. The NCEA believes that

there is a high risk that no adequate design will be possible, nor the right procedures will be put in place for the flushing mechanisms to be effective. For example, depending on the accretion it may results to be necessary to flush more frequently than once every two years. Possibly, the proposed flushing would remove only a small part of the sediment deposits near the flushing outlet, thus the dead storage might be lost in a decade. Furthermore, it is questionable if the discharge through the proposed 1 m diameter outlet tube will initiate sufficient flow velocity in the reservoir to draw a large quantity of sediment towards the outlet. This will depend on the characteristics of the fine particles that have settled. Possibly a larger capacity outlet may have to be designed: this should be subject to further studies[2].

It is recommended to:

- make a more accurate calculation of the typology of the sediments flowing into the reservoir and settlement process and distribution in the reservoir;
- based on that, assess the technical feasibility and effectiveness of several alternative flushing structures and procedures, considering flow velocities, sediment accretion and other factors that can jeopardise the effectiveness of flushing.

Downstream effects and environmental flow

In the ESIA (page 9-1) it is claimed that fish species in Gucha River and their migration patterns will be established during the design stage of the project. However, the possibility of fish species migrating the dam site location should be a reason to investigate their occurrence upfront because of the possible need of a (expensive) fish ladder structure across or bypassing the dam structure.

Recommendation: The identification of fish species that need to pass the dam site need to be studied in the ESIA as well as the possible need for a fish ladder.

Socio-economic aspects

The following socio-economic aspects are not or are incompletely addressed in the revised ESIA and RAP:

- Social and economic action plans;
- Policies relating to employment in particular women and children, and injury;
- The structure and accessibility of grievance mechanisms;
- Health impacts, in particular the increased risk of water borne diseases such as malaria;
- Economic feasibility / willingness to pay;
- The Environmental and Social Management and Monitoring Plan (ESMMP) meet the IFC performance standards.

The initial ESIA did not provide information on involuntary resettlement of land; loss of crops, structures and livelihoods. The revised ESIA gives the number of affected households as 79 being displaced permanently and an additional 670 affected by partial land acquisition, damaged crops and livelihoods (Section 13.2.4). However, this data is not confirmed in the Resettlement Action Plan (RAP) census (Section 5). Uncertain and unconfirmed information can only be gleaned from various sources within the RAP.

[2] References: ICOLD Bulletins Nr. B067 Sedimentation Control of Reservoirs (1989), B115 Dealing with Reservoir Sedimentation (1999), BR140 Mathematical Models and Sedimentation Transport and Deposition in Reservoirs (2007), B147 Sedimentation and Sustainable Use of Reservoirs and River Systems (2009).

The revised ESIA discusses the broad principles of malaria diagnosis and response, however information is generic and not specific to the project area; nor does the ESIA describe what steps will be taken and by whom, and their relationship to the project, in order to mitigate and respond, as well as monitor.

Although the economic feasibility of the project is not part of an ESIA study, the NCEA noted previously that the willingness of the general public to pay for water had not been assessed, and it remains ignored in the revised ESIA. It is expected that all 528.000 people will get much better access to drinking water but at what cost is not yet published in public documents. Moreover, people who are not willing or able to pay for drinking water will most likely want to continue to collect water from the river at no cost.

The Environment and Social Management and Monitoring Plan (ESMMP) is intended to be a stand-alone document, a clear tool for management and monitoring purpose throughout the lifespan of the project. In its present form, it is difficult to navigate between various Sections. It is also silent on remarks regarding the various institutions' financial capacity to undertake any of the allocated responsibilities and tasks. As stated in the NCEAs previous Advisory Report, the contractor appears to have disproportionate responsibility for tasks, and without any sharing of tasks with other institutions / bodies. Neither is it apparent that there has been any consultation at senior management level within the institutions to establish their level of understanding as to their responsibilities to the project or their financial capacity to meet the obligations.

It is recommended to:

- Further develop the RAP. As previously recorded by the NCEA, the guidelines on involuntary resettlement provided by the IFC need to be followed in order to avoid unrealistic expectations, speculation, corruption and conflict. The grievance mechanism described in the RAP (Section 11) is not clear on how easily it is accessible to PAPs through the office of the Supervising Engineer. It would benefit from further description of the traditional grievance mechanisms being used and that this approach is the preference of the PAPs. Furthermore, the RAP – including very specific information on the grievance mechanism(s) – needs to be disclosed to the PAPS as a public document integrated within the ESIA;
- Mitigation of water borne diseases due to the realisation of the water reservoir, in particular malaria, needs to be elaborated specific to the project area;
- The willingness to pay for drinking water remains unclear. Possibly use can be made of willingness to pay in comparable areas in Kenya where drinking water already has been provided. In the NCEA's view this is important because the economic feasibility is based upon the assumption that all people will pay. Moreover, the people who are not willing to pay most likely will want to continue to take their domestic water directly from the river at no cost. The impact this may have needs to be described in the ESIA.
- Adjust the ESMMP in order to meet the IFC PS 1. It is also suggested that the information within the ESMMP be contained in a single matrix (including responsibilities and budget allocation) with numbered cross-references to supporting text.

The NCEA concludes that the ESIA does not provide sufficient information for informed decision making by RVO. The main shortcomings have been discussed in this chapter. All shortcomings are described in chapter 3 of this advice.

3. Detailed findings

IFC Performance Standards

The ESIA sets out the IFC Performance standards (IFC PS) in Section 11.4 but makes no reference to what extent these have been followed in the ESIA. The revised ESIA goes no further in demonstrating that IFC Performance Standards have been considered at all in the ESIA process.

The NCEA screened the project according to the IFC Performance Standards and found that Performance Standards 1-6 are triggered and potentially 8 as a contingency. PS 7 does not seem to apply to this project.

The NCEA has reviewed the ESIA against each of the triggered IFC PSs. In the following sections, the key objectives of the respective IFC PSs[3] are presented in a box followed by the shortcomings.

To comply with the IFC-PS, the NCEA recommends remedying all these shortcomings in a further revision of the ESIA study.

In Annex 4 the NCEA provides comments and suggestions on the design of the project.

3.1 PS 1-Assessment and Management of Environmental and Social Risks and Impacts

Objectives PS 1:

- To identify and evaluate environmental and social risks and impacts of the project.
- To adopt a mitigation hierarchy to anticipate and avoid, or where avoidance is not possible, minimise and where residual impacts remain, compensate/offset for risks and impacts to workers, affected communities, and the environment.
- To promote improved environmental and social performance of clients through the effective use of management systems.
- To ensure that grievances from affected communities and external communications from other stakeholders are responded to and managed appropriately.
- To promote and provide means for adequate engagement with affected communities throughout the project cycle on issues that could potentially affect them and to ensure that relevant environmental and social information is disclosed and disseminated.

The size of the project and the significance of risks and impacts is sufficient to justify a full scale ESIA. The NCEA judges the ESIA and ESMMP, as well as the RAP, as inadequate in fulfilling PS 1 (and PS 5) requirements:

- The quality of the water has been assessed in the ESIA (table 2-13 and 2-14) and it showed that the World Health Organisation thresholds are not passed. The samples were taken in February 2017 at the end of the dry period, and not during the start of the rainy period when pollution loads tend to peak. This is shortcoming in the ESIA, and thus there is a small risk that the consequent initial design parameters are too optimistic.

[3] For a full description and explanation of the IFC Performance Standards: www.ifc.org.

Pertinently, the ESIA recommends a more intensive water quality program during the design phase;

- The ESIA lacks an assessment of the key stakeholder's capacity, both skilled and financial, to deliver on roles assigned;
- The ESIA refers to 'representatives' without explaining who they are, who they represent or their mandate e.g.: 'Dam Committee';
- The RAP considers the project-affected people (PAPs) but it is of concern that security (Section 3.3) appears to be an issue. There is no explanation of the cause of the security problem, nor description as to what steps were taken to engage with the PAPs, nor proposals for how this concern is going to be addressed in the Resettlement process. It is not in line with the IFC PSs that this matter is ignored.
- The ESIA does not consider a broad project-specific grievance mechanism for non-employment or non-resettlement issues[4];
- There is no evidence in the revised ESIA that information has been delivered to the PAPs in such a way as to ensure that they understand fully the impacts of the project, on their community and on them as individuals, including the requirement to pay for water connections. For instance, the ESIA does not address the impact of fencing of the dam site. The NCEA was advised during the site visit that a fence would be erected around the whole dam and reservoir (ie. water source) and which would remain after completion of construction. Despite NCEAs advice, the ESIA does not yet describe the perimeter in which the fence is planned and consult with PAPs about land use restrictions e.g. habitation and cattle would be forbidden within the perimeter; access across the flooded area would be closed. Thus, the consultation process is considered inadequate and falls short of this PS.
- In the ESIA, section 8.2.6.8 mentions several mitigation measures related to "Water loss" during the project construction: "Creation of awareness on water resource management and conservation.", and "Introduce economic and financial initiatives towards water saving and responsible utilisation at all consumer points." No responsible authorities or concrete steps are identified in this aspect;
- The ESIA and the project do not follow the practice promoted by the World Bank in their procedures OP 4.37 and BP 4.37 "Safety of Dams" about guidance of large dam projects. It is recommended that in the subsequent phases of this project the WB procedures be followed;
- The ESIA does not provide sufficient information on the sediment load of the river flow. Only theoretical guidelines have been used. Adequate data from field checks is needed to assess the lifetime of the reservoir;
- The ESIA mentions the objective to provide drinking water for over 500.000 people in Nyamira and Kisii county. The ESIA however does not provide evidence whether the required amount of water will be available during dry years because essential data are lacking on the flow regime. This data should be collected and addressed in the ESIA and substantiate different alternatives in design and water provision;

[4] Recommended resources: Addressing Grievance from Project Affected Communities. Guidance for Projects and Communities on Designing Grievance Mechanisms. Good Practice Note September 2009. www.ifc.org CAO Grievance Mechanism Toolkit: www.cao-grm.org.

3.2 PS 2 - Labour & Working Conditions

Objectives PS 2:

- To promote the fair treatment, non-discrimination, and equal opportunity of workers.
- To establish, maintain, and improve the worker-management relationship.
- To promote compliance with national employment and labour laws.
- To protect workers, including vulnerable categories of workers such as children, migrant workers, workers engaged by third parties, and workers in the client's supply chain.
- To promote safe and healthy working conditions, and the health of workers.
- To avoid the use of forced labour.

The project will mobilise a workforce that warrants careful impact and risk assessment with attendant policies on human resources (recruitment, welfare, protection), child labour and gender, and which will relate to local legislation and regulations as well as to this Standard.

- The revised ESIA includes a Section 8 on Human Resource Management but describes an inadequate grievance mechanism for employees at Section 8.10 which does not provide access points, nor assign clear responsibility for handling concerns (not only disputes), detailed methods of resolution / assistance elucidated and alternative routes for assistance suggested should the internal mechanism not satisfy the member of staff. Section 8.3 posits a mechanism for complaints about Equal Opportunity and Anti-Bullying but is silent on the capacity of management to handle the complaints or what training may be needed. This PS requires an integrated and structured employee mechanism.
- The ESIA does not describe a worker's compensation policy or procedure.
- Although the revised ESIA includes sections relating to Pregnancy and Equal Opportunity (Section 8) and lists relevant legislation (Section 11) it still lacks clear policies on Gender and Child Labour. References in Section 13.2.5 (Construction impacts) are not adequate.

3.3 PS 3 - Resource Efficiency & Pollution Prevention

Objectives PS 3:

- To avoid or minimise adverse impacts on human health and the environment by avoiding or minimizing pollution from project activities.
- To promote more sustainable use of resources, including energy and water.
- To reduce project related GHG emissions.

The project will make use of natural resources like, water, sand clay and will use energy. For construction of the dam a large amount of topsoil and subsoil will have to be excavated (25.000 m3 soil and weathered rock). It is suggested one could attempt to make work with work, e.g. by using the excavated materials for landfill to prepare a flood free platform at the locations of the water treatment plant (WTP) and/or the hydropower plant (HPP). The ESIA report claims that materials to be excavated for e.g. the dam foundation are considered to be not suitable for landfill at the platforms for the HPP and the WTP.

However, it seems unlikely that excavation and dumping of excavation material, e.g. originating from the key trench of the dam, elsewhere in the area will be cheaper than using

suitable selected granular or clayey materials for parts of the platform of the HPP and the WTP. It is therefore recommended to further investigate and describe to what extend selection of suitable granular or clayey materials originating from the trench of the dam can be re-used for (parts of) the platform of the WTP and HPP.

3.4 PS 4 - Community Health, Safety & Security

Objectives PS 4:

- To anticipate and avoid adverse impacts on the health and safety of the affected community during the project life from both routine and non-routine circumstances.
- To ensure that the safeguarding of personnel and property is carried out in accordance with relevant human rights principles and in a manner that avoids or minimises risks to the affected communities.

This project will have significant impact outside the project boundaries on people living and maintaining livelihoods in the zone of influence.

- The increased risk of malaria and water-borne disease is handled inadequately. The ESIA requires a consistent and relevant discussion as to the risk in the project area and related mitigation measures. The revised ESIA includes a Section 7 on Malaria Management without making reference to the risk relating specifically to the project. Nor does it describe project-specific steps that will be taken in this area to minimise the risks, mitigate and address them and at whose cost. Neither malaria nor the increased risk of water-borne disease are discussed in the text relating to Public Health (Section 13.2.5.8) although an uninformed mitigation step for malaria is suggested in the attendant list.
- The ESIA devolves responsibility to the Contractor for management of HIV/AIDS among workers and refers to an HIV/AIDS Management Strategy which is not included in the Report. The ESMMP makes reference to community awareness and training and devolves responsibility to the Contractor, Supervising Engineer and the LVSWSB at a cost of half a million Kenya Shillings without describing the activity, nor considering the capacity of these institutions to deliver or the possibility of engaging with trained medical personnel.
- Public Health Services (devolved function of the County Government) should assist in the process of identifying as well as assessing project-related risks and costing mitigation measures e.g. from the large body of water in the reservoir: i) swimming lessons; ii) fishing; iii) waste management / disposal; from contaminated air emissions; traffic congestion and dust. This project will have significant impact outside the project boundaries on people living and maintaining livelihoods in the zone of influence. The ESIA does not address these issues.
- The revised ESIA does not provide evidence that PAPs have been made aware of the costs involved in installing or use of a private water connection.
- NCEA was initially told that the dam and reservoir were to be fenced. A brief reference in the revised ESIA (Section 13.2.6) advises that the reservoir will now not be fenced and that steps will be taken to help the community understand risks and how to avoid the dangers and to provide swimming lessons. However, nobody is allocated responsibility nor is budget provided.
- What risks are associated with either private or public security personnel? And how will grievances about their arrangements and behaviour be addressed? This is still not addressed in the ESIA.

- The revised ESIA still ignores the significant conflict in the community last year which resulted in houses being burned down and a man shot. There is no mention of these events or description how these were handled; risks of future occurrences; and how repercussions will be mitigated in order to secure the safety of the community. One reference to the security situation in the RAP (Section 3.3), which prevented the consultation process from being completed, suggests that the problem persists.

3.5 PS 5 – Land Acquisition & Involuntary Resettlement

Objectives PS 5:

- To avoid and, when avoidance is not possible, minimise displacement by exploring alternative project designs.
- To avoid forced eviction.
- To anticipate and avoid or, where avoidance is not possible, minimise adverse social and economic impacts from land acquisition or restrictions on land use by (i) providing compensation for loss of assets at replacement cost and (ii) ensuring that resettlement activities are implemented with appropriate disclosure of information, consultation, and the informed participation of those affected.
- To improve, or restore, the livelihoods and standards of living of displaced persons.
- To improve living conditions among physically displaced persons through the provision of adequate housing with security of tenure at resettlement sites.

As the project entails both physical and economic displacement, it will require in-depth consultation with PAPs and establishment of a range of grievance mechanisms to address and seek to resolve disputes quickly. This includes PAPs who may not have formal rights, such as illegal squatters and farmers. It will involve participative land and resource mapping (referring to UN Free Prior Informed Consent Principles) and assessment of effects: e.g. on houses, stores, graves.

- There was, initially, an overriding assumption that most land for the project will be public land and therefore no compensation would be needed. However, the need for a RAP was established as it became apparent that land, structures and livelihoods would be negatively impacted by the project.
- The RAP census (Section 5) does not provide data on the total number of people or households affected. Uncertain and unconfirmed information can only be gleaned from various sources within the RAP. The revised ESIA has increased the number of affected households to 79 being displaced permanently and an additional 670 affected by partial land acquisition, damaged crops and livelihoods (Section 13.2.4) but this is not confirmed in the RAP. The RAP (Section 6) states that 193 owners could not be identified due to PAPs lack of cooperation, a situation that needs to be remedied to comply with this PS as well as consultation requirements of PS1.
- The RAP shows that 86% of the PAPs are dependent on either crop or livestock farming. Many have been occupying public land to this end for generations and will have certain rights that need to be assessed. A Land Use Plan included in the ESIA/RAP is necessary to understand the PAPs Land Tenure and is still lacking in both documents. It is therefore not certain that informal rights have been either considered or assessed for compensation. The RAPs list of each parcel of land affected does not include the status of tenure of the occupier and therefore calculations of compensation may not be reliable.

- Because the ESIA has deferred consideration of borrowed land, the RAP makes no reference to the possible need for the project to acquire additional land for the Contractor's campsite; quarries and laying pipelines; access roads and water kiosks.
- The revised ESIA now includes a location map of the proposed quarry but remains silent with regard to the quantities of materials required nor has their range of grain sizes been reported and it is not clear if these quarries will yield sufficient material for building the dam. In particular, the fine aggregate quarries are far away, reportedly at a distance of about 80 km from the dam site, pretty expensive. Without the proposed Land Use Plan, it is not known what land must be acquired, whether private or customary use, or whether structures or livelihoods may be affected.
- PAPs were not clearly informed as to the exact layout of the dam and reservoir; and which land would be acquired; or how much land, structures and crops would be compensated. It is not clear from the RAP that this has been addressed adequately as the RAP refers to consultations during the survey only whereas both a RAP and ESIA are intended to be participative processes (referring to UN Free Prior Informed Consent principles) and the final drafts shared with the PAPs. Furthermore, the fact that some PAPs were reluctant to provide information underscores the lack of information that is needed for the process to be completed.
- The revised ESIA still lacks assessment of loss of livelihoods / economic displacement on impacted upstream and downstream activity.
- The RAP would benefit from describing the traditional dispute resolution mechanisms on which it intends to rely when addressing grievances, and the steps taken to ensure that PAPs are comfortable with the proposed process. In the light of the PAP resistance described above, this is of concern and unlikely to be satisfied.
- County Office emphasises need for PAPs to get registered Land Title in order to prove ownership. No project-specific assistance is being offered in order to expedite the process or relieve lower-income groups of the cost of registration, nor address PAPs with customary or squatters' rights. The revised ESIA and RAP remain silent on this issue.

3.6 PS 6 – Biodiversity Conservation & Sustainable Management of Living Natural Resources

Objectives PS 6:

- To protect and conserve biodiversity.
- To maintain the benefits from ecosystem services.
- To promote the sustainable management of living natural resources through the adoption of practices that integrate conservation needs and development priorities.

The construction of the Bonyunya Dam implies a (possible) disruptive component of the ecosystem in the project area that should be addressed, and possible effects should be met with proposed mitigation measures.

- The ESIA provides information on the occurrence of fish and importance of fish in general that is based on irrelevant information of NW-European fish species. The possible need of fish ladders or fish passes in the outlet works of the dam are still not yet addressed in the ESIA;

- The ESIA mentions: "There should be a progressive catchment management plan targeting Gucha River sub-basins. In this regard, involvement of the communities, landowners and relevant authorities will be necessary". However, no concrete steps are suggested. And neither are responsible authorities assigned to this planning;
- The ESIA includes no reference to the stage of the first filling of the reservoir. This is a critical test of a dam and one of its dangerous moments. This stage should be accompanied with special care e.g. continuous observations and measurements. Assessment of the effects downstream related to the (initial) change in water flow during this stage should be included and mitigation measures explained;
- The ESIA does not specify the land use of the strip along the reservoir between Max Water Level (MWL) and Full Supply Level (FSL). This might be used for selected agriculture purposes (e.g. grass) provided that this would not increase the inflow of sediments or organic matter, e.g. dung. If farmers would be allowed to grow grass, that might lower the necessary budget for periodical clearing of the empty strip;
- The water supply project will increase water consumption in the area and thus have an impact on water resources availability downstream. This should be considered in a water resources assessment at the basin level and/or in a river basin management plan. This is a public responsibility and should be taken care of by the responsible authority WRMA, especially as this should also inform the decision on the abstraction license.

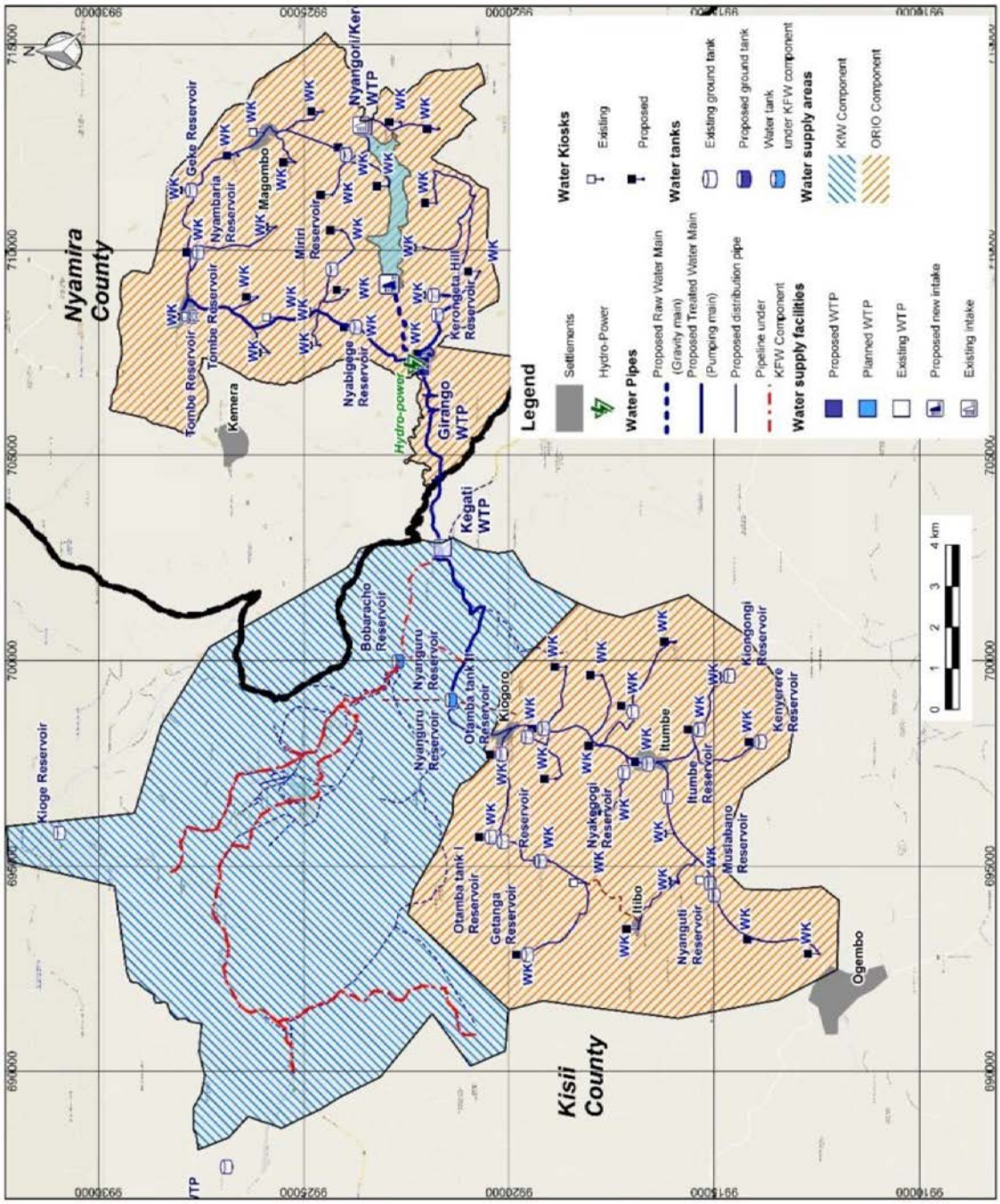
3.7 PS 8 – Cultural Heritage

Objectives PS 8:
- To protect cultural heritage from the adverse impacts of project activities and support its preservation.
- To promote the equitable sharing of benefits from the use of cultural heritage.

Although not triggered in the ESIA, and with no cultural sites known in the project area at this point, a budget of Kshs 1 million is allocated to 'cultural sites chance finds' in the ESIA Mitigation matrix (Table 14.1 Item 14)

- A 'chance find' procedure must support the budget allocation or require one to be developed by the contractor. At this it is not clear who is responsible and who will have to pay the allocation once a cultural heritage is found. This is still not clarified in the revised ESIA.

Annex 1: Map Kisii-Nyamira Water Supply & Sanitation Project



Annex 2: Composition of the Working group and project information

Proposed activity

This project is known as Kisii-Nyamira Water Supply & Sanitation Project. The main objective of this project is aimed at improving the access to water, improving sanitation and health, generation of electricity and economic empowerment for the Kisii and Nyamira people at the end of the project period. The construction of the Bonyunyu Dam as well as a distribution network are therefore essential parts of this project.

The Netherlands Enterprise Agency (Rijksdienst voor Ondernemend Nederland – RVO) is ready to provide a grant to support the execution of this project. However, RVO requested to execute an Environmental and Social Impact Assessment that meets international good practice standards. Therefore, the IFC performance standards are used as a reference framework and the Netherlands Commission for Environmental Assessment has been requested to secure that these standards are met.

A working group of experts of the Netherlands Commission for Environmental Assessment (the NCEA) has been composed and they have visited the project site and met the proponent and relevant actors.

Project number: 7270

Composition of the working group of the Commission for ESIA

Advisory report:

- Ms T. van Gool (Tanya) – Chair & former Ambassador in Kenya
- Mr J. Timmerman (Jan) – Expert Civil engineering & Dams
- Mr J. Hunink (Johannes) – Expert Hydrology and Ecology
- Ms B. Brainch (Brenda) – Expert Conflict Management & Resettlement
- Mr A.J Kolhoff (Arend) – Technical secretary and expert on EIA and environmental issues
- Mr G.A. Hendriks (Giel) – Technical secretary