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REPORT AND RECOMMENDATION

ON A REQUEST FOR INSPECTION

REPUBLIC OF KENYA
WATER AND SANITATION SERVICE
IMPROVEMENT PROJECT (P096367) AND
WATER AND SANITATION SERVICE
IMPROVEMENT PROJECT – ADDITIONAL
FINANCING (P126637)

MARCH 29, 2017

The Inspection Panel
Report and Recommendation
on
Request for Inspection

REPUBLIC OF KENYA:
Water and Sanitation Service Improvement Project (P096367) and
Water and Sanitation Service Improvement Project - Additional Financing (P126637)

A. Introduction

1. On November 29, 2016, the Inspection Panel (the “Panel”) received a Request for Inspection (the “Request”) of the Water and Sanitation Service Improvement Project (P096367) and its Additional Financing (P126637) (the “Project” or “WaSSIP”). The Request was submitted by 47 residents of Murang’a County in Kenya, supported by a local non-governmental organization (the “Requesters”). The Requesters asked for their identities to be kept confidential. The Request claims that water diverted from rivers in their county will have irreversible environmental impact and cause water shortages, leading to food insecurity and domestic water scarcity. After conducting its initial due diligence, the Panel registered the Request on January 12, 2017.

2. In accordance with the Resolution establishing the Inspection Panel,¹ the purpose of this Report and Recommendation is to make a recommendation to the Board of Executive Directors on whether an investigation into the matters alleged in the Request is warranted. The Panel’s recommendation is based on its consideration of the technical eligibility of the Request and its assessment of other factors as required in the Panel’s Resolution and its Operating Procedures.²

3. This document provides a description of the Project (Section B), a summary of the Request (Section C), a summary of the Management Response (Section D), and the Panel’s determination of the technical eligibility of the Requests and observations (Section E). The Panel’s recommendation is presented in Section F.

B. The Project

4. The WaSSIP was approved by the World Bank’s Board of Executive Directors for an amount of US\$150 million equivalent (IDA Specific Investment Loan) on December 20, 2007. The development objectives of WaSSIP are to: (i) increase access to reliable, affordable and

¹ International Development Association (Resolution No. IDA 93-6), “The World Bank Inspection Panel”, September 22, 1993 (hereinafter “the Resolution”), para 19. Available at:

<http://siteresources.worldbank.org/EXTINSPECTIONPANEL/Resources/ResolutionMarch2005.pdf>

² Inspection Panel Operating Procedures, April 2014. Available at:

<http://ewebapps.worldbank.org/apps/ip/PanelMandateDocuments/2014%20Updated%20Operating%20Procedures.pdf>

sustainable water supply and sanitation services; and (ii) improve the water and wastewater services in the areas served by the Athi Water Services Board (AWSB), the Lake Victoria North Water Services Board (LVNWSB) and the Coast Water Services Board (CWSB).

5. The Project was restructured and scaled up in May 2012 under an Additional Financing (WaSSIP AF) of US\$300 million (IDA Specific Investment Loan), with the revised development objective “to increase the access to water supply and sanitation services in the project implementing entities’ service areas.”³ The AF has three components, and is co-financed by the Agence Française de Développement (AFD). The original WaSSIP credit was fully disbursed and the project closed on December 31, 2013. The closing date of the WaSSIP AF is December 15, 2017. As of February 2017, WaSSIP AF was 73 percent disbursed.

6. Component 1 of the AF supports the rehabilitation and extension of water supply systems, the development of additional water sources for Nairobi, drought mitigation measures, and improvements in wastewater collection and treatment facilities in the jurisdiction of the AWSB.⁴ The US\$85 million Northern Collector Tunnel Phase 1 (NCT1), a subcomponent of Component 1 of the AF, is the subject of this Request. It consists of a tunnel that will transfer raw water through approximately 11.8 kilometers (km) from intakes at the Maragua, Gikigie and Irati rivers to an outlet at the Githika River near Makomboki, upstream of the existing Thika Dam (Ndaikaini), which serves Nairobi County.

7. The NCT1 is a central feature of a four-component Master Plan to increase water supply to Nairobi and its satellite towns.⁵ The plan includes:

- Transfer of water from Maragua River, Irati River and Gikigie River to Thika Dam;
- Construction of a water treatment plant 6 km downstream of the dam;
- Construction of a raw water gravity main from Thika Dam to the proposed water treatment plant; and
- Construction of a 44-km treated-water gravity main up to Kabete reservoirs (capacity 1.60m³/s) via Ngethu and Gigiri water treatment plants to meet the city’s year 2017 water demand.

8. Mobilization for the NCT1 started in February 2015 and its construction is currently underway. When the AF was approved, the Environmental Assessment (EA) category changed from B to A to reflect the Project’s potentially significant environmental and social impacts. The Project triggered seven safeguard policies: (i) Environmental Assessment (OP/BP 4.01); (ii) Natural Habitats (OP/BP 4.04); (iii) Physical Cultural Resources (OP/BP 4.11); (iv) Involuntary Resettlement (OP/BP 4.12); (v) Indigenous Peoples (OP/BP 4.10); (vi) Safety of Dams (OP/BP 4.37); and (vii) Projects on International Waterways (OP/BP 7.50).

9. An Environmental and Social Impact Assessment (ESIA) specifically for the NCT1 was commissioned by the AWSB and cleared by the Bank on January 25, 2015. The ESIA indicated

³ Project Paper on a Proposed Additional Credit to the Republic of Kenya for a Water and Sanitation Services Improvement Project, April 9, 2012, p. vii.

⁴ Project Paper.

⁵ Feasibility Study and Master Plan for Developing New Water Sources for Nairobi and Satellite Towns. 2012; modified in 2016.

that the Project would ensure adequate water provision to Nairobi and its satellite towns and bring employment and other social and economic benefits. The ESIA listed a reduction in downstream flows in the rivers and the prevention of migratory fish upstream by the intake structure as potential negative environmental impacts. For mitigation, the ESIA recommended: (i) ensuring that the proposed abstraction be continuously monitored; and (ii) constructing a fish pass as per Project design. Additional negative impacts identified by the ESIA related to the construction of the facilities were expected to be localized and relatively short term.⁶

C. The Request for Inspection

10. The Request was submitted by 47 residents of Murang'a County who authorized two residents to represent them. The Requesters are supported in their submission by a local non-governmental organization and asked for their identities to be kept confidential. They state that while they understand the need to provide additional water to Nairobi, they are concerned about impacts from the construction of the NCT1. The Requesters claim that the water transfer from the rivers in their area will have irreversible environmental impact and cause water shortages, leading to food insecurity and domestic water scarcity. They also allege that the ESIA for the NCT1 was not comprehensive, and community participation in this process was insufficient. The Requesters are also concerned about the impartiality of the Independent Panel of Experts (IPE) constituted to advise the NCT1.

11. **Environmental Impacts.** The Requesters allege the ESIA for the NCT1 is not comprehensive and, as a result, the NCT1 is being constructed without adequate geotechnical studies to map rocks, aquifers, water table, swamps, springs and the necessary mitigation measures. They believe tunneling will puncture aquifers, interrupt underground water flow paths and cause rivers and springs to dry up. They fear these impacts could cause irreversible environmental damage.

12. **Cumulative Impacts.** The Requesters allege that comprehensive environmental and social impacts from NCT1 and NCT2, which will extend the tunnel into "*another four stressed MC [Murang'a County] rivers...[that] share a common water catchment and hydrology and have integrated uses within the County*"⁷ have not been undertaken.

13. **Water Availability and Demand.** The Requesters are concerned about possible water shortages in Murang'a County for domestic, agricultural and industrial use when water from the rivers is diverted into the NCT1. They fear periods of zero or near-zero flow, especially in the dry season (December through March and July through October). These periods, as acknowledged by the ESIA, would normally be preceded and/or followed by periods with extreme low flow, and less flow available for existing and future use downstream.

14. **Water Storage Capacity.** The Requesters allege that the Thika Dam does not have enough storage capacity to absorb the additional water intake from the NCT1. They state that the dam receives water from the Thika River and spills over "*twice a year and in a period of less than [a]*

⁶ Final Study Report, Environmental and Social Impact Assessment for Northern Collector Tunnel Phase 1, December 2014.

⁷ Request for Inspection, p. 5.

month.”⁸ Moreover, they allege that additional water carried by the NCT1 into the Thika Dam will result in spillage three to four months a year, causing a waste of flood flow that otherwise would be used in the Murang’a County to replenish low lands and recharge the water table, thereby enabling farming in the dry season.

15. **Disclosure of Information and Community Participation.** The Requesters allege a lack of disclosure of information about the comprehensive environmental and social impacts. They further claim that the impacts from the NCT1 were not properly explained to the relevant communities, and “*misinformation*” was spread by suggesting that the project would transfer only flood water while, according to the Requesters, the Project will withdraw regular flows almost year round.

16. **The Independent Panel of Experts.** As a response to the complaints received from the Requesters and the Murang’a County, the AWSB established an Independent Panel of Experts (IPE) to study the project and provide recommendations for improvement. The Requesters raise concerns about the work of the IPE and question its impartiality.

D. The Management Response

17. The Management Response states that the Project will have significant positive impacts for beneficiaries in both Nairobi and Murang’a County. Management explains that it understands the concerns raised by the Requesters but argues that, based on comprehensive studies of the Project’s potential impacts, there is no indication that it would cause adverse impacts to the people living nearby the tunnel. Management expresses its confidence that potential environmental, health and safety impacts from the project were thoroughly studied and consulted and are properly addressed by the Project’s design and mitigation measures. The Management Response concludes that all relevant policies and procedures were followed and the Requesters’ rights or interests have not been, nor will be, directly or adversely affected by a Bank failure to implement its policies and procedures.

18. **Environmental Impact.** Management claims that according to the geotechnical studies supporting the design, it is not possible for the tunnel to interrupt groundwater flows as alleged in the Request. Such groundwater flows occur over a large area, in the context of which the tunnel is a small obstacle around which flows will pass. To avoid any water seepage into the tunnel, the entire tunnel will be lined with a watertight lining, following international best practice. Given that the tunnel will be fully watertight and grouted to the outside rock, Management states that it is not plausible that rivers or springs would dry up as alleged, nor can the NCT1 puncture aquifers.

19. **Cumulative Impacts.** Management points out that a full ESIA for the NCT1 was conducted and finalized in January 2015. The ESIA includes an ecological field investigation, which led to a revision of the technical design to accommodate the ecological requirements of the rivers, especially for trout, and the inclusion of fish ladders in the intakes. In addition, the Borrower convened an IPE to review the technical designs and construction methodology, as well as the

⁸ Request for Inspection, p. 8.

Project's potential environmental and social impacts, and to assist during the implementation of the Project.

20. **Water Availability and Demand.** In response to the Requesters' concern that diverting water into the NCT1 would cause water shortages for domestic, agricultural and industrial use, Management notes that the NCT1 intake infrastructure is designed in a way that ensures that only flood flows are abstracted. The rivers must rise to flood level before any water can physically be diverted into the tunnel, so no abstraction can take place below flood level. Management stressed that studies confirmed that the guaranteed compensation flow provides more water than is needed to satisfy the downstream water demand up to 2035. To that end, the downstream compensation flow identified in the ESIA was increased by the AWSB to address stakeholder concerns and to ensure that current and future downstream water demands are met.

21. **Water Storage Capacity.** The Management Response states that the NCT1 intakes will be closed when the Thika Dam is full and before any overflow will occur. Moreover, any spillage from the Thika Dam would not be wasted as the water would flow back into the Thika River and end up at Masinga Dam. Management acknowledges that currently, the Thika Dam often overflows after the rainy season.

22. **Disclosure of Information and Community Participation.** The Management Response claims that contrary to what is alleged by the Requesters, consultations on the ESIA were extensive and relevant materials, including the full ESIA study report, were distributed to stakeholders to inform their input. In addition, Management explains that the decision by the National Environmental Management Authority (NEMA) to grant the license for the NCT1 construction was only taken after carrying out consultations with potentially affected persons and reviewing comments received from both members of the public and lead agencies. Management considers that Project stakeholders have been sufficiently informed.

23. Management further argues that many of the concerns expressed by the Requesters are based on inaccurate information or draft documents that have been subsequently updated. The Management Response explains that the Project team, the World Bank's Grievance Redress Service (GRS), the implementing agency, and the IPE tried to engage with the Requesters to discuss their concerns, but to no avail.

24. The Requesters told the Panel that when invited to meet with GRS they were not available. However, they had a preference, in any event, to receive answers to their concerns in writing. They also said that they provided comments to the IPE, but never saw their final report and were not able to meet with the IPE.

25. **The Independent Panel of Experts.** Management's view is that the approach to establishing the IPE followed good international practice, and that the IPE, composed of international and Kenyan experts, is highly credible and impartial.

E. Panel Review of the Request, the Management Response, and Eligibility Visit

26. Panel Member Jan Mattsson, who is leading this case, Panel Chairman Gonzalo Castro de la Mata, Operations Officer Birgit Kuba and Senior Operations Officer Laura Valli visited Kenya from February 23 to February 28, 2017, and held meetings with the Requesters, representatives of the AFD, government officials from the Ministry of Water and Irrigation, NEMA, AWSB, the supervising engineer and the construction company, Murang'a County officials, and members of the IPE. The team visited the construction site at the Thika Dam, as well as several locations along the Maragua, Gikie, and Irati rivers. The team also met with Bank staff based in the Nairobi Country Office. The Panel expresses its appreciation to all mentioned above for sharing their views and exchanging information and insights, and extends special thanks to the World Bank Country Office for assisting with logistical arrangements.

27. The Panel's review is based on information presented in the Request, the Management Response, other documentary evidence, and information gathered during the site visit. The following review covers the Panel's determination of the technical eligibility of the Request according to the criteria set forth in the 1999 Clarification (subsection E1),⁹ and observations on other factors supporting the Panel's recommendation (subsection E2). A chronology of the Project and the Inspection Panel request is attached as Annex 1.

E.1. Determination of Technical Eligibility

28. The Panel is satisfied that the Request meets all six technical eligibility criteria of paragraph 9 of the 1999 Clarifications. The Panel notes that its confirmation of technical eligibility, which is a set of verifiable facts focusing to a large extent on the content of the Request as articulated by the Requesters, does not involve the Panel's assessment of the substance of the claims made in the Request.

29. Criterion (a): *"The affected party consists of any two or more persons with common interests or concerns and who are in the borrower's territory."* The Request was submitted by 47 residents of Murang'a County potentially affected by the Project, who authorized two residents to represent them for the purposes of the Panel process. The Request includes the signatures of the Requesters. The Panel confirms that the Requesters live in the Borrower's territory and are potentially affected by Project activities. The Panel thus considers the requirement of paragraph 9(a) as met.

30. Criterion (b): *"The request does assert in substance that a serious violation by the Bank of its operational policies and procedures has or is likely to have a material adverse effect on the requester."* The Request raises concerns that the Project will have irreversible environmental impact on the Murang'a County and cause water shortages, leading to food insecurity and domestic water scarcity. It also alleges that the ESIA for the Project was not comprehensive, and community participation in this process was insufficient. The Requesters are also concerned about the

⁹ "1999 Clarification of the Board's Second Review of the Inspection Panel", April 1999 (hereinafter "the 1999 Clarifications") available at <http://siteresources.worldbank.org/EXTINSPECTIONPANEL/Resources/1999ClarificationoftheBoard.pdf>

impartiality of the IPE constituted under the Project. The Panel is thus satisfied that the requirement of paragraph 9(b) is met.

31. Criterion (c): *“The request does assert that its subject matter has been brought to Management’s attention and that, in the Requester’s view, Management has failed to respond adequately demonstrating that it has followed or is taking steps to follow the Bank’s policies and procedures.”* The Panel has verified that the Requesters’ concerns were brought to the Bank’s attention on different occasions prior to filing the Request. The Requesters submitted a complaint to the World Bank GRS in December 2015 and, subsequently, to the IPE, but deemed the response they received unsatisfactory. The Panel finds that this criterion has been met.

32. Criterion (d): *“The matter is not related to procurement.”* The Panel is satisfied that the claims do not raise issues of procurement.

33. Criterion (e): *“The related loan has not been closed or substantially disbursed.”* At the time the Request was received by the Panel, the Project was 73 percent disbursed. This criterion is therefore met.

34. Criterion (f): *“The Panel has not previously made a recommendation on the subject matter or, if it has, that the request does assert that there is new evidence or circumstances not known at the time of the prior request.”* This is the first time the Panel has received a Request on this subject matter and thus this criterion is met.

E.2. Panel Observations Relevant to its Recommendation

35. In making its recommendation to the Board and in line with its Operating Procedures, the Panel considers: (i) whether there is a plausible causal link between the harm alleged in the Request and the Project; (ii) whether the alleged harm and possible non-compliance by the Bank with its operational policies and procedures may be of a serious character; and (iii) whether Management has dealt appropriately with the issues, or has acknowledged non-compliance and presented a statement of remedial actions that address the concerns of the Requesters. The Panel records below its preliminary observations on the alleged harm and compliance, noting that in doing so, it is not making any definitive assessment of the Bank’s compliance with its policies and procedures, and any adverse material effect this may cause.

36. **Water Issues in Kenya and Nairobi.** The Panel notes that Kenya is considered a water-scarce country.¹⁰ Rainfall in Kenya varies highly based on geography and season, and over 80 percent of the country’s territory is arid or semi-arid. Kenya is currently experiencing a drought and the number of acutely food-insecure people in the country is expected to rise to well over 2 million between February and August 2017.¹¹ The Panel understands that effective water allocation, utilization, and management is critical to meeting the country’s growing water demand. In 1999, the government adopted a new National Water Policy, setting specific targets for access

¹⁰ According to the Project Paper, Kenya has an average renewable supply of freshwater resources of around 526 cubic meters per capita per year. Project Paper, page 1.

¹¹ World Food Programme, Kenya Drought Situation Report #01, January 2017.

https://www.wfp.org/sites/default/files/WFP-K%20Drought%20SITREP_JAN%202017_FA.pdf

to water and sanitation services. Parliament enacted a Water Act in 2002, constituting a far reaching reform of the water sector.¹²

37. Nairobi and its neighboring population centers face serious water supply deficits, which have worsened during the recent drought years. According to the Ministry of Water and Irrigation, many people in Nairobi receive water only three or four days per week. Against this background, the ministry, with the support of the World Bank and AFD, commissioned a Feasibility Study and Master Plan for Developing New Water Sources for Nairobi and Satellite Towns to meet water demand up to 2035. The strategy includes optimizing existing facilities, developing new sources and increasing storage of surface water, diversifying water sources, and developing water supply systems for neighboring towns.¹³ The Master Plan includes, as one of its priority investments, Phase 1 of the NCT. The Ministry of Water and Irrigation informed the Panel that the water that will be transferred to Nairobi is to support human consumption in both the formal and informal sectors, including in low-income areas.¹⁴

38. **Early Concerns from the Murang’a Technical Committee, and Consensus Agreement.** During a meeting with the Panel team in the field, the Requesters explained that in 2015 local community members concerned about the Project asked the Murang’a County Government to hire an independent team to conduct a technical review of the Project, since they felt that the AWSB had been dismissive of their concerns. A technical committee was formed and submitted its report to the county in April 2015. The Requesters believe that this report, which is attached to their Request for Inspection, validates most of their concerns.

39. Subsequently and under the auspices of the Ministry of Water and Irrigation, the Murang’a County Government and the AWSB met over a period of six months to review the issues and agree on practical recommendations to remedy the concerns on the Report. This review resulted in the “Technical Consensus on the Northern Collector Tunnel Project,” signed between the parties in January 2016. This “Consensus Agreement” changed key parameters of the Project to the satisfaction of the county (discussed in greater detail below). The Consensus Agreement was then adopted by the County Assembly.

40. Members of the Technical Committee expressed to the Panel team that their signature on the Consensus Agreement did not mean that they had retracted their report or its findings. The Panel notes that, in fact, the Consensus document, as written in its Preamble, “*builds upon the Report of the Technical Committee and follow-up meetings between the parties.*”¹⁵ The Panel further was informed by the Murang’a County Government and the AWSB that the Consensus Agreement was based on dialogue following the report, not on new or different data.

¹² Project Paper, page 1, 2.

¹³ Project Paper, page 2, 3.

¹⁴ According to Bank Management, the NCT1 Project has been designed to increase water supply to the Nairobi West residential areas of Karen, and low income areas of Ngando and Kangemi through the Western Transmission Pipeline, and Nairobi East residential areas of Utawala, Jomo Kenyatta International Airport, Mihango, Ruai, and low income areas of Korogocho and Gitari Marigo through the Eastern Transmission pipeline. Email correspondence of March 20, 2017.

¹⁵ Joint Technical Consensus and Position on the Northern Collector Tunnel, p. 1.

41. **Tunnel Impacts on Underground Water.** The Requesters explained to the Panel team that they are concerned about the Project causing irreversible environmental harm. One of the Requesters told the Panel that he communicated with the AWSB in 2015 and received confirmation that, at that point, no geotechnical data was available for the Project. The Requesters fear that, due to the lack of this data, the use of explosives in the construction of the tunnel may blast aquifers, causing a permanent negative impact. The Requesters reiterated their concerns that the tunneling will interrupt underground water flow paths and dry rivers and springs.

42. During its meeting with the World Bank's team, the Panel was told that the tunnel design was informed by adequate geotechnical studies. In turn, the IPE explained to the Panel that they reviewed the geotechnical data, and stated that it was available and sufficient to make decisions, but not in the form of a "*unified report*." The IPE told the Panel that one important feature of the tunnel is the construction of six monitoring wells (piezometric boreholes) along the tunnel drilled between September and November 2016 to monitor potential impacts on groundwater. Monitoring will be undertaken by the consultant and the contractors and reported monthly to the IPE.

43. According to Management, the tunnel will not interrupt groundwater flows and the entire tunnel will have a watertight lining, following international best practice, to avoid seepage into the tunnel. The IPE confirmed the technical viability of this approach. In its second report, the IPE explicitly states that the ESIA "*is reasonable*" in not anticipating major fractures, and that mitigation measures to treat this "*unlikely occurrence*" are already specified in the technical specifications and included in the cost of the Project.¹⁶ The IPE reiterated to the Panel team that it is highly unlikely that problems with aquifers may arise, although it also emphasized the need for continued monitoring during construction. The IPE told the Panel team that there are always risks in such a Project, but it believes that proper mitigation measures are in place. The Panel team visited the tunnel construction site and learned that given the geological layers present, most of the tunneling is expected to be done with drills. So far, no explosives have been used, since the ground material is soft enough to drill through. According to the builder, if it becomes necessary to use explosives, this will be done on a small-scale and in a precise, localized manner with no far-reaching impacts.

44. In addition to these meetings, the Panel has reviewed extensive technical documentation, as well as two reports issued so far by the IPE dated September and December 2016 respectively. Regarding potential impacts on underground water and based on these and other documents, the Panel confirms that the tunnel design has been informed by several geotechnical and geophysical investigations going back as far as 1998. There is also previous experience with two other tunnels in the same general area (Mathioya and Thika-Chania), which according to the IPE, show little interaction between the tunnels and underground water. Finally, the Panel highlights that underground water is being monitored through the monitoring wells and thus provides opportunities for rapid response. Also, the Panel notes that, should temporary and minor impacts occur during the construction period, the Project foresees transporting water to affected communities.¹⁷ The Panel concludes that the Project has considered the potential impacts of the tunnel on underground water, and that monitoring of this is currently in place.

¹⁶ NCT-IPE Mission 2nd Report, November 2016, p. 49.

¹⁷ Management Response, p. 42.

45. **NEMA Licensing Process.** During its visit, the Panel also met with NEMA, the state agency established under the Environmental Management and Co-ordination Act No. 8 of 1999 (EMCA) as the principal instrument of the Government for the implementation of all policies relating to the environment and environmental licensing. NEMA disclosed to the Panel a summary of comments and complaints received relating to the Project and NEMA's actions in response. On February 9, 2015, NEMA licensed the Project with certain conditions, which form the basis for monitoring. NEMA's decision was guided by the following principles: the ecosystem approach, consideration of alternatives, hierarchy of impact mitigation, equitable sharing, adequacy of risk assessment and management, reference to existing planning frameworks and policy direction, adequacy of public participation, adequacy of proposed environmental protection facilities, and adequacy of the Environmental Impact Assessment (EIA) report. According to NEMA, notwithstanding the issuance of the EIA license, unforeseen issues that emerge can be addressed through the issuance of Improvement Orders. Also, annual environmental audits need to be submitted for license renewal.

46. The Requesters informed the Panel team that a case was filed with the National Environmental Tribunal (NET), challenging the issuance of the environmental license for the Project. The Requesters believe that NEMA should not have issued the environmental license due to a lack of data and serious adverse impacts that the Project would cause to the environment. The Requesters told the Panel team that the NET ordered Project activities to stop until the hearing, but, according to them, work did not stop. Bank Management told the Panel that, following the Tribunal's order, Project works were halted for 100 days. The AWSB challenged the jurisdiction of the NET in the High Court, which concurred that NET did not have jurisdiction to hear this case. An appeal was then filed with the High Court, which is currently being processed.

47. **Cumulative Impacts.** The Requesters argued that the ESIA did not study cumulative impacts. They are concerned that Phases 1 and 2 of the NCT Project were not comprehensively studied. According to the Requesters, Phase 2 will extend the tunnel to four additional resource-stressed rivers in Murang'a that share a common water catchment and hydrology, and have integrated uses within the county. The Murang'a Technical Committee also expressed its concern that other rivers will be tapped at later stages and the cumulative impacts of the current Project and planned future projects have not been studied.

48. According to Bank Management, a comprehensive assessment was conducted for the NCT1 and accommodates all water demands. The Management Response explains that it is unclear whether the Bank will finance any future aspects of the Master Plan beyond NCT1, and argues that any further intervention can be assessed independently from NCT1. According to the Management Response, future engagement in the context of the Master Plan will be independent from NCT1 and will require new safeguard analyses and instruments.

49. The ESIA discusses (i) cumulative impacts on downstream hydrology; (ii) changes in flows in the Maragua River and hydropower production; and (iii) impacts on city drainage and sewer systems. The Panel notes that cumulative impacts related to water diversion can be properly addressed through existing rules for water allocation, which consider environmental flows the top priority, as more fully discussed below, and, furthermore, that any future project would, as part of its design, need to study cumulative impact on the affected communities.

50. **Water Availability and Demand.** The Requesters expressed their concern that the water abstraction from the rivers will lead to serious water shortages for communities in Murang'a and downstream, ultimately contributing to food insecurity. They explained to the Panel team that current and future water demands in Murang'a and other downstream areas have not been adequately taken into account in this Project. According to them, Murang'a County has no comprehensive Water Management Plan and therefore it is unclear how much water it requires. The Requesters claim that Project documents state that 70 percent of people in Murang'a have access to piped water, while in reality it is only around 35 percent. They are concerned that irrigation needs as well as commercial and industrial activities were not taken into consideration when designing the Project, and that irrigation demands in Murang'a are high. The Requesters told the Panel team that current users in Murang'a cannot get licenses, and that all water abstraction license applications are denied because of the tunnel. According to them, the tunnel has been listed as an existing abstraction since at least January 2015 and no water-use licenses have been granted since.

51. The Murang'a County Government is of the view that Project preparation could have been of better quality. According to them, the hydrological study was prepared late and demand, especially for irrigation, was not properly assessed. The county government shared with the Panel team that currently there is enough water in Murang'a, but expressed concern about meeting the demand in five to 10 years. Murang'a County and four other counties were recently recognized as belonging to *Nairobi Metro* and they claimed that the county's population is growing rapidly in many areas, and food security is progressively becoming an issue. According to the county government, a new university and a hotel just opened in Murang'a city and there is a growing demand for irrigation.

52. Murang'a officials also explained to the Panel team that Kenya's Constitution provides that every citizen has a right to free water, and therefore they do not oppose the project, as already signaled by their signature and approval of the Consensus Agreement. They noted that only 40 percent of the population has access to piped water and the county's target is to increase it to 60 percent. The county government noted that for these reasons, and in order to meet the "*equitable*" principle of water allocation, the Consensus Agreement includes new water supply and community projects in the county as "*offshoots*" of the NCT1. The Panel notes that under the agreement, the AWSB commits to implement community water projects in Muranga, Gatanga, Gatango, Ichichi, Kiruri, and Makomboki, as well as a water tank for Gataguaguga and the extension of a water supply line to Kambiti and Kambirwa. It also includes the Ithanga Community Water Project, although under financing separate from NCT1.¹⁸

53. The Panel notes that water in Kenya is a national resource, and that it does not belong to any given county. Water allocation is the responsibility of the Water Resources Management Authority (WRMA), established by the Kenya Water Act in 2002 with the mandate of "*developing principles, guidelines and procedures for the allocation of water resources*" and receiving applications for permits for water use. WRMA conducts licensing on an annual basis in accordance with the Water Act. WRMA has an extensive database on all water sources in Kenya, and shared its data with the Project. Additional data was also provided by the Kenya Electricity Generating

¹⁸ Joint Technical Consensus and Position on the Northern Collector Tunnel, Section D, item 5.

Company Limited. The Bank team explained that a demand analysis is included in the Master Plan and includes expected abstractions up to 2035. This analysis is based on country-wide population projections and a demand forecast.

54. The Panel notes that WRMA follows allocation guidelines¹⁹ in order to make objective decisions and in accordance with the 2002 Water Law. These guidelines are based on the following hierarchy: (i) ecological demands that form part of the “Reserve;” (ii) basic human needs, forming the second part of the “Reserve;” (iii) commitments made in international treaties and inter-basin water transfers; and (iv) allocations to individual users by means of a permit. The first priority is constituted by categories (i) and (ii), i.e., for the Reserve. Additional allocations are based on the following hierarchy: existing users, new domestic and industrial uses, new livestock, wildlife, inland fisheries, new irrigation and new hydropower generation. WRMA has established detailed rules for calculating water demand.

55. The Panel notes that the January 2016 Consensus Agreement between the Murang’a County Government and AWSB increased the minimum compensation flow from Q95 to Q80,²⁰ and included the commitment of the AWSB to prepare an Integrated Water Use Master Plan of Murang’a County by June 2017. According to the Bank, although the original adoption of Q95 as the reserve flow for the three rivers was adequate to meet downstream demands and based on proper studies and the law, the updated reserve flows of Q80 for Murang’a and Gikigie rivers and Q68 for Irati River are more conservative, resulting in water abstracted from the rivers only when higher flows are present. The IPE stated that although releasing Q95 is compliant with statutory rules, in practice this may have created considerable stress on the aquatic environment, and that the new minimum compensation flows of Q80 will bring the flow regime in the rivers closer to their natural behavior.²¹

56. According to the AWSB²², the water allocation for NCT1 (the basis for the WRMA license request) was established following three steps: (i) the development of a flow duration curve to estimate the reserve flow of Q95; (ii) an evaluation of all existing and future abstractions in the three rivers based on WRMA licenses, information from water service providers in Murang’a County, and design reports from the Tana Water Services Board. (Future demand to the year 2035 was estimated up to location level²³ based on these data. Downstream compensation flow was set to ensure future water demands and existing planned supply intakes are met, with a safety factor of 1.2.²⁴ In addition, the AWSB explained to the Panel team that they took into account future abstractions for other purposes including irrigation, unlicensed abstractions and industrial requirements, thus exceeding WRMA requirements. AWSB notes that the design was conservative because it did not take into account the flow of tributaries below the intake points); and (iii) the additional ecological requirements identified in the ESIA. Finally, and as a result of the Consensus

¹⁹ WRMA Guidelines on Water Allocation, 2009

²⁰ Within the context of this Project, flow percentiles are derived statistically and used to define the natural flows which occur in the rivers if no abstraction takes place. For example, Q80 is the flow which is equaled or exceeded for 80 percent of the flow record. Q95 and Q68 will also be referenced in this report.

²¹ The natural flow is the typical flow of the river when not subject to infrastructure development.

²² Murang’a County Government Report of the Technical Committee on the Northern Water Collection Tunnel Phase 1 Project: A Review by Athi Water Services Board. January 2016.

²³ Abstraction point.

²⁴ This means that an additional 20 percent has been added to the calculated total.

Agreement, the minimum reserve flows were increased to Q80 for two rivers and Q68 for a third river.

57. Regarding aquatic biodiversity, the Panel notes that mitigation measures were identified in the ESIA and are incorporated in the design in the form of fish ladders and adjusted flows. The Panel notes the conclusion of the IPE in its second report that “*change from the natural conditions will in no way constitute a high pressure on the immediate aquatic environment of the three mountain streams.*”²⁵

58. The World Bank team and AWSB explained that the design of the tunnel intake will not allow water abstraction that causes the flow downstream of the tunnel to fall below the minimum compensation flow (i.e., below Q80 or Q68, depending on the river). The Ministry of Water and Irrigation also confirmed that the automated intakes will allow for variability in the rivers’ flow regimes by providing for increases in flow downstream of the diversion points. The revised 2016 Hydrological Assessment Report states that “*automated intake gates at all River intakes have been provided in the design to ensure that during wet years when Thika Reservoir is full and spilling, the tunnel intakes are closed and no water is diverted.*”²⁶ Project engineers on site showed these designs to the Panel team.

59. The Murang’a County Government, however, expressed concern that the tunnel may be managed by the Nairobi County Government without involvement of Murang’a. The Panel notes that there is a commitment in the Consensus Agreement to involve Murang’a County officials in monitoring and oversight of the intakes.²⁷ At the request of the Panel, Bank Management clarified that “*the intakes are also designed in a way that the public can see the compensation flow. As part of AWSB’s communication campaign the public will be informed how they can check on the compensation flows. This will be done through the press, radio (including Kikuyu local language) and TV media. In addition, the compensation flow measurements will be made public on AWSB’s webpage.*”²⁸ During its site visits to the planned intake locations, the Panel observed that it is currently possible to access the rivers before and after the planned intakes and thus gauge the level of intake at any given time.

60. Based on the above observations, the Panel concludes that the planned levels of abstraction are sufficiently robust to ensure the maintenance of reserve flows in the river. The Panel also notes that these levels of abstraction have been adjusted conservatively to err on the side of caution. The Panel further notes that demands of current and future users through the year 2035 have been estimated in accordance to the water allocation rules it has reviewed.²⁹

61. Notwithstanding these observations, the Panel emphasizes the importance of developing and implementing transparent operational procedures to ensure that the public can be properly

²⁵ Second IPE Joint Report, November 2016, p. 29.

²⁶ Hydrological Assessment Report, December 2016, p. 49.

²⁷ Joint Technical Consensus and Position on the Northern Collector Tunnel, Section C, item i.

²⁸ Email correspondence of March 20, 2017.

²⁹ Feasibility Study and Master Plan for Developing New Water Sources for Nairobi and Satellite Towns. Appendix 1 B: Population Projections, Forecast Water Demands and the Design Capacity of Existing Schemes in the Region. AWSB, February 2016.

informed about abstractions at any given time in a transparent and participatory manner, and in accordance with the Consensus Agreement.

62. **Water Storage Capacity.** The Requesters explained to the Panel team that the Thika Dam has a small buffering capacity and fills up completely by March every year. According to them, the dam spills twice a year. The Requesters argue that the tunnel would create additional spilling in the rainy season; on the other hand, in the dry season the dam would not receive any water since, according to the Project's design, no water would be abstracted from the rivers.

63. According to Management, the intake gates at all river intakes are provided in the design to ensure that when Thika Reservoir is full and spilling, the tunnel intakes are closed and therefore no water is diverted. This was also confirmed by the AWSB and the tunnel builder. The documents reviewed by the Panel explain that these issues are incorporated in the physical design of the works.

64. **Disclosure of Information and Community Participation.** The Requesters are concerned about disclosure of Project information and consultation. They explained to the Panel team that public participation in environmental issues is required by Kenya's Constitution. They claim that the Project was only presented to people that are less impacted by it. According to them, the communities downstream (to the east of the tunnel), which will experience most adverse impacts, were never consulted. The Requesters argue that people living downstream of the tunnel are not aware of the Project, even after construction has started.

65. According to the Bank team, consultations started during the preparation of the Master Plan and date back to 2011. The Bank team is of the opinion that consultations were far-reaching, continuous, and meaningful. They added that the AWSB has a good team of communication specialists, which designed a high-quality website, produced social media, conducted talk shows, spoke to people in churches and used *chief's barazas* (community meetings) as a forum to engage people. According to the Bank team, efforts were made to convey the technically complex aspects of the Project to affected communities in a way that is understandable to non-experts. GIBB Africa, which prepared the Project's ESIA, informed the Panel that the consultations for the ESIA were well attended. The local government, the Nairobi County Government, citizens in the diaspora and many local communities showed interest in the Project. GIBB told the Panel that the issue of water shortages in Murang'a was discussed extensively during public consultations for the ESIA, and a commitment was made to support local community water projects.

66. The Panel notes that the consultation sessions of the Project included meetings with officials, experts and the public between 2009 and 2015. According to consultation records, many of which include the signatures of participants, meetings took place in Nairobi, Thika, Nyeri, Murang'a, Ichiche, Kikuri, Makomboki, Main, Kinyona, Gikigie, Wanjii, Kanyenyaini and various other locations. The Panel notes that public consultations were undertaken before the finalization of the ESIA Terms of Reference (TOR) and after a draft was prepared. In total, about 30 documented stakeholder consultation sessions were held by AWSB and NEMA between November 2011 and January 2015, including six public meetings with communities living within the tunnel alignment (with 372 participants), and five focus group discussions with affected people in Kangema and Kigumo sub-counties (with 96 participants). In addition, 20 consultation sessions

were undertaken during the ESIA studies for the NCT1 community projects (with 961 participants), most of them located downstream of NCT1.

67. The Requesters confirmed to the Panel team that they have not met with the GRS or the IPE. Although the GRS contacted them twice, the Requesters said that on both occasions they were not available to meet. The Requesters explained that they would have spoken to GRS if other dates were proposed. With regards to the IPE, the Requesters explained that they wanted a written response to the concerns, not just a verbal one. They explained that they never received a written response from the IPE and therefore did not want to meet with them.

68. The IPE informed the Panel that they have provided written responses to all inquiries, and that these responses were given to the AWSB for posting on its web site. The IPE provided the Panel with a copy of such responses, which in the view of the Panel's team covered the issues in a comprehensive manner. The web site of the AWSB includes the first report of the IPE dated November 2016, but no additional information nor the responses.³⁰ The IPE is continuing its review of and guidance for environmental and social aspects of the Project and its monitoring. The IPE is also reviewing the quality and sufficiency of the geological, hydrological and ecological studies.

69. **The Independent Panel of Experts.** The Requesters explained to the Panel team that the GRS, after receiving their complaint, proposed to assemble an independent panel to review the technical details of the Project. The Requesters provided feedback on the TOR for the IPE and expressed their reservations, as they believe the TORs were biased towards confirming desired outcomes. The Requesters are of the opinion that the IPE is not independent as its Chairman, they claim, appears to be an employee of the tunneling consultant and is also a member of the National Irrigation Board, which reports to the Ministry of Water and Irrigation.

70. The Bank team explained to the Panel that, after technical issues of the Project were raised, it became clear that it was desirable to have a third party review their concerns. The Bank therefore advised the client to constitute the IPE. According to Bank Management, the IPE is independent and its members are specialists from different professional bodies. It was decided that the regulator would take the lead in this process to ensure independence. Different national scientific institutions were involved in the selection process of the members of the IPE. The Ministry of Water and Irrigation as well as the AWSB also emphasized the independence of the IPE. According to AWSB, important improvements were made after the IPE got involved, especially on the construction methodology.

71. The Panel has reviewed the TOR of the IPE, as well as the Report of the Selection Committee.³¹ The committee was chaired by a representative of the Water Services Regulatory Board, and included representatives nominated by the Institute of Engineers of Kenya, the Geological Society of Kenya, the Environmental Institute of Kenya, and the Hydrological Society

³⁰ <http://awsboard.go.ke/wp-content/uploads/2016/12/IPE-Summary-of-Findings-November-2016.pdf>

³¹ Interview Report by Independent Professionals for Expression of Interest and Recommended Final List. Water Services Regulatory Board. April 7th, 2016.

of Kenya. The committee oversaw the selection process, which included advertisements in the national newspapers published in October and November 2015. The committee reviewed 30 applications, and interviewed nine applicants, either in person or via Skype. Each candidate was ranked by each Committee member against specific criteria for each position in the IPE. The Panel has reviewed the individual rankings provided by each member of the selection committee, and confirms that the five members chosen for the IPE were those receiving the highest rankings, while giving preference to ensuring gender balance (in accordance with Kenya's Constitution) when rankings were similar. The Panel confirms that the IPE chair received the highest ranking for the dam specialist position. The Panel observes that the IPE chair disclosed in his curriculum vitae that he worked as a consultant for the engineering firm constructing the tunnel in 2012 and 2013 on two projects in Rwanda and Malawi, respectively.

72. In its meeting with the members of the IPE, the Panel team found them well-informed, open and thorough in their technical explanations. The IPE mentioned that it has been able to raise technical issues and concerns, and that mitigation measures have been developed in response. The Panel notes that the IPE has raised important issues in its two reports so far, and that the level of compliance with its recommendations is being documented through "compliance matrices" for each topic covered.

73. **Current Developments.** The Panel learned that the Master Plan is currently being revisited with the support of the World Bank and AFD. The Bank team explained to the Panel that Phase 1 of the Master Plan, which included groundwater exploration and the development of a wellfield, had failed, since the exploratory phase showed that the groundwater was not sufficient to develop a wellfield. According to the Bank team, this gap now needs to be filled. The other components of the Master Plan are also under review, and the timeframe for completion is June 2017.

74. As stated in the Consensus Agreement, the AWSB is collaborating with Murang'a County and other mandated institutions to undertake a catchment abstraction survey, an assessment of integrated water demands in Murang'a County, and will develop an Integrated Water Use Master Plan. According to Bank Management, the preparation of this plan is underway and is expected to be finalized by January 2018. The Panel notes that this study was anticipated for 2017, before the planned closure of the project by year-end.

E.3. Panel's Review

75. The Panel recognizes the Requesters' efforts in raising their concerns, welcomes the level of commitment expressed by the Bank and the implementing agency, and acknowledges the technical capacity of the stakeholders engaged in the implementation of the Project. On the basis of information collected during its eligibility phase, the Panel notes that certain technical aspects and data related to the NCT1 have evolved, and increased in precision and quality during the course of the Project. The Panel also notes that additional data generation and analysis are underway, including the Integrated Water Use Master Plan for Murang'a County, currently under preparation. Management informed the Panel that the consultant selection process is on-going and that the study is expected to be completed by February 2018. As agreed in the consensus matrix, the consultant will undertake a catchment abstraction survey, assess the future potential for domestic, industrial and irrigation water needs of the County, and develop an integrated Master Plan. If future

water demand exceeds current storage capacity in Murang'a, the Master Plan recommends appropriate sites for future storage,³² which the Panel understands would remain feasible given that the NCT1 takes less than 40% of the flood waters at the intake points, and additional water is added by the tributaries joining the rivers below these points.³³

76. The Panel notes that the IPE has delivered important inputs into the Project design, which have been incorporated into the Project by AWSB. The Panel further notes that the IPE has confirmed the technical viability of the Project, while emphasizing the need for continued monitoring. In response to a question from the Panel, Management confirmed that AWSB has engaged a consultant who is currently preparing the NCT1-Thika dam system operational rules. It is expected that this work will be completed by July 2017.

77. Regarding the issue of abstraction, the Panel understands that the initial Project design may have not been sufficiently conservative, as the identification of Q95 as the minimum compensation flow could have negatively impacted the ecological health of the river. The Panel notes that the Consensus Agreement changed the minimum compensation flow from Q95 to Q80 for Maragua and Gikigie Rivers, and Q68 for Irati River. These levels are more conservative and should provide room for mitigation of potential impacts.

78. The Panel notes that the design of the NCT1 has benefitted from a considerable set of studies, processes and dialogue, including but not limited to Project studies, including the ESIA, the Murang'a County Technical Report, the Consensus Agreement, the NEMA's Licensing process, WRMA's review of water allocation issues, and the improvements resulting through the involvement of the IPE. The Panel believes that Management, throughout the course of Project design and implementation, has recognized concerns of potential impacts, and that mitigation measures have been adopted or are underway. The Panel is of the view that these mitigation measures can be expected to adequately remedy potential harm. With regard to potential impacts of future projects, the Panel notes that such projects, which the Bank has to date not committed to support, would require their own assessments.

79. The Panel notes that extensive public consultations were undertaken between 2009 and 2015, both in the context of Project preparation, but also as part of the NEMA obligations. These consultations included the public, focus group discussions with affected people, professionals and authorities. Many of them were located downstream of NCT1.

80. Finally, the Panel stresses that effective operational procedures for the intake structures, compensation channels, and tunnel are critical mitigation measures to ensure that water abstraction does not exceed the current calculations, and that adjustments are made if required and as contemplated in WRMA's permit rules. The Panel believes it is equally important that the Project is operated in a transparent manner, to ensure the community has access to information regarding actual abstractions and flows both upstream and downstream of the tunnel, thus dissipating any

³² Joint Technical Consensus and Position on the Northern Collector Tunnel, Section A, item ii, further elaborated through Management's email correspondence of March 20, 2017.

³³ Murang'a County Government Report of the Technical Committee on the Northern Water Collection Tunnel Phase 1 Project: A Review by Athi Water Services Board. January 2016.

ongoing concerns. To that end, the Panel notes that, as part of the AWSB's communication campaign, the public will be informed how they can check on the compensation flows. This will be done through the press, radio (including Kikuyu local language) and TV media. In addition, the compensation flow measurements will be made public on AWSB's webpage.

F. Recommendation

81. The Requesters and the Requests meet the technical eligibility criteria set forth in the Resolution that established the Inspection Panel and the 1999 Clarification. However, based on the observations noted above, and considering the Project design and measures introduced to address the concerns raised by the Requesters, the Panel does not recommend an investigation.

82. In making its recommendation the Panel has taken into account the existing mitigation measures of the Project and adjustments to its design, the commitments in the Consensus Agreement, the resulting additional mitigation measures, Management's commitment to monitoring efforts, the continuing work of the IPE, and the relevant provisions of Kenya's Water Allocation Law.

83. The Panel notes that this recommendation does not preclude the possibility of a future Request for Inspection based on new evidence or circumstances not known at the time of the current Request.

84. If the Board of Executive Directors concurs with this recommendation, the Panel will advise the Requesters accordingly.