



## Kihansi Catchment Conservation and Management Project (P126361)

AFRICA | Tanzania | Environment & Natural Resources Global Practice |  
Global Environment Project | Investment Project Financing | FY 2014 | Seq No: 9 | ARCHIVED on 19-Dec-2018 | ISR35244 |

Implementing Agencies: National Environment Management Council, MINISTRY OF FINANCE

### Key Dates

#### Key Project Dates

Bank Approval Date: 26-Sep-2013

Effectiveness Date: 02-Dec-2013

Planned Mid Term Review Date: 06-Jun-2016

Actual Mid-Term Review Date: 06-Jun-2016

Original Closing Date: 31-Dec-2018

Revised Closing Date: 31-Dec-2019

### Project Development Objectives

Project Development Objective (from Project Appraisal Document)

The proposed Project Development Objective (PDO) is to enhance biodiversity conservation in the Kihansi catchment. The project will complement as well as assist on-going efforts of key resource regulatory authorities to conserve critically endangered and highly endemic plant and animal species and their habitat in the Kihansi catchment.

Has the Project Development Objective been changed since Board Approval of the Project Objective?

No

### Components

Name

Component 1: Institutional capacity building for the management of the Kihansi catchment:(Cost \$1.07 M)

Component 2: Conserve endangered species in the Kihansi catchment:(Cost \$4.61 M)

Component 3. Project Management:(Cost \$0.30 M)

### Overall Ratings

Name	Previous Rating	Current Rating
Progress towards achievement of PDO	● Moderately Satisfactory	● Satisfactory
Overall Implementation Progress (IP)	● Satisfactory	● Satisfactory
Overall Risk Rating	● Moderate	● Moderate

### Implementation Status and Key Decisions

Key activities under each component are progressing well and all the agreed actions from the last mission in June 2018 have been implemented. Planned consultancies under Component 1 have been initiated and deliverables are almost finalized for two of the studies. These studies include: (i) Environmental Water Requirement of Kihansi Gorge, a draft report which provides guidance on the preparation of the Environmental Flow Assessment and its pilot application in Kihansi catchment was submitted on October 15, 2018; and (ii) an assessment of the Economics of the Lower Kihansi Hydropower Plant (LKHP) has been finalized and the report has been shared with stakeholders. These studies are important for



the determination of mitigation activities in the catchment and the associated costs of the long term conservation and the sustainability of the plant. A third important study, which is underway, is the preparation of guidelines for the management of river and river banks in Tanzania.

As part of the implementation of the project communication strategy, school awareness campaigns have been conducted and have been appreciated as one of the effective strategies to inform the communities and the general public about biodiversity conservation and the project in general. The project also prepared information materials which were used during the World Environment Day. At village level, important information about the project was communicated as part of the wild fire campaigns carried out in eight villages in Mufindi district and six villages in Kilombero district.

Ecological monitoring and species survivorship experiments have continued both in captive breeding facilities and in the KSTs natural habitat in the Kihansi gorge. Five reintroduction events of KST populations back to the Gorge have been carried out from May 2018 as per recommendation to release KSTs at shorter intervals to enhance their chances of survival in the wild. The reintroductions have involved a total number of 2,347 KSTs out of which 1,347 were reared in the Tanzania captive breeding facilities. KST monitoring and reintroduction report of November 2018 indicate that toads are currently easily seen during the day and more callings are heard at night. This is a more promising trend of KST survivorship in the wild.

Studies on population and distribution of wild coffee in the Kihansi gorge have indicated that there are more than 21,000 coffee plants in the Kihansi Gorge found at four locations in the Gorge with the highest percentage of plants (35%) found in the vicinity of the lower Upper Spray Wetland. Wild coffee studies have generated very promising results, including: identification of significant and useful genetic diversity information; propagation methods; seasonal population dynamics; adaptation to environments other than Kihansi seems to be possible; and the potential for domestication of wild coffee is very high. Experiments to propagate and domesticate wild coffee to coffee growing centers are on-going. Research initiatives to establish other characteristics such as resistance to diseases and beverage values are in process, and so far nutritional analysis and caffeine content have been analyzed. Preliminary results indicate more caffeine content (3-4 times) in Kihansi coffee compared to Robusta and Arabica. Further analysis of the differences is being undertaken by the Tanzania Food and Drugs Agency (TFDA).

All the processes required to declare Kihansi catchment an Environmental Protected Area which included installation of temporary beacons for the boundary of the proposed area (3471.66 Ha) have been almost completed. However, the final steps are awaiting Government decision on interagency issues that need to be resolved before the boundary of the protected area can be formally finalized and gazetted as an Environmental Protected Area according to the Environmental Management law (EMA, 2004). The Attorney General has been tasked to assess and confirm the validity of Njerera Forest Reserve, which was established in 1957. The findings will guide the Government to decide on the type of protecting and the appropriate institution for the same.

Integrated Pest Management Plan (IPMP) packages, which have been approved by the Ministry of Agriculture and translated into popular Kiswahili versions, have been printed and distributed. Although the IPMP packages were essentially prepared for the use of farmers in the Kihansi Catchment, the Ministry of Agriculture has up-scaled them to be used as national IPM guidelines country-wide. The IPM packages will improve capacity in pest management and contribute to adoption of good agricultural practices.

Identification of all 901 water sources has been completed and it has been established that 641 (71%) are in Mufindi, 216 (24%) are in Kilolo and 44 (5%) are found in Kilombero. Of the water sources identified and mapped, 96.2% were perennial and 3.8% were seasonal. 22.7% of perennial water sources were protected and 77.3% were not protected. Furthermore, 38.2% of seasonal water sources were protected and the remaining 61.8% were not protected. This makes the Kihansi catchment the first catchment in the country whose water sources have been identified, mapped, demarcated and where a management plan has been prepared.



## Risks

### Systematic Operations Risk-rating Tool

Risk Category	Rating at Approval	Previous Rating	Current Rating
Political and Governance	--	● Moderate	● Moderate
Macroeconomic	--	● Moderate	● Moderate
Sector Strategies and Policies	--	● Moderate	● Moderate
Technical Design of Project or Program	--	● Moderate	● Moderate
Institutional Capacity for Implementation and Sustainability	--	● Substantial	● Substantial
Fiduciary	--	● Moderate	● Moderate
Environment and Social	--	● Moderate	● Moderate
Stakeholders	--	● Moderate	● Moderate
Other	--	● Substantial	● Substantial
Overall	--	● Moderate	● Moderate

## Results

### PDO Indicators by Objectives / Outcomes



Total area in the Kihansi catchment protected for biodiversity conservation. (Hectare(Ha), Custom)				
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	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	9,080.00	9,080.00	9,080.00	13,080.00
Date	24-Nov-2014	31-May-2018	30-Nov-2018	31-Dec-2019
Comments:	The project has so far demarcated an area of 3471.66 Ha for the proposed Kihansi catchment an Environmental Protected Area, which will be allocated conservation status soonest as the Government resolved institutional mandate overlaps. The final decision on the protection status is expected by January 31, 2019.			
Endemic species (Nectophrynoides asperiginis, Coffea kihansiensis, Charaxes mtui) conserved within the Kihansi catchment. (Number, Custom Supplement)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	2.00	2.00	2.00	3.00
Endemic species of KST, Nectophrynoides asperiginis conserved within the Kihansi catchment. (Number, Custom Breakdown)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	50.00	50.00	1,000.00
Date	24-Nov-2014	31-May-2018	30-Nov-2018	31-Dec-2019
Endemic species of wild coffee, Coffea kihansiensis conserved within the Kihansi catchment (Number, Custom Breakdown)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	21,000.00	21,000.00	21,000.00	21,000.00
Date	24-Nov-2014	31-May-2018	30-Nov-2018	31-Dec-2019
Host plants of a new butterfly, Charaxes mtui conserved within the Kihansi catchment. (Hectare(Ha), Custom Breakdown)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	0.00	0.00	200.00
Date	24-Nov-2014	31-May-2018	30-Nov-2018	31-Dec-2019

### Overall Comments

The project has so far demarcated an area of 3471.66 Ha for the proposed Kihansi catchment designation as an Environmental Protected Area, which will be allocated conservation status as soon as the Government resolves the institutional mandate overlaps. The final decision on the protection status is expected by December 31, 2018

Butterfly research findings indicates *Kihansi charaxes* is present in the Kihansi so far, restricted in the upper gorge and area above the Kihansi River main fall (950 – 1150m). Caterpillar and larva of *Kihansi charaxes* were in found on September 23, 2018. Pupa stage caterpillar was found on October 06, 2018 (14 days after the



larva was found). Adult stage specimen was hatched on October 27, 2018. These findings are quite promising in the establishment of the abundance and distribution of the butterfly, hence the area to be put under protection.

### Intermediate Results Indicators by Components

Component 1: Institutional capacity building for the management of the Kihansi catchment				
<b>► Sustainable financing mechanism established based on payment for ecosystem services. (Yes/No, Custom)</b>				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	No	No	No	Yes
Date	24-Nov-2014	31-May-2018	30-Nov-2018	31-Dec-2019
Comments:	A procurement process for engaging a consultant for the study to develop options for a sustainable financing plan for long term conservation and management of Kihansi Catchment is progressing well. This study will benefit from two previous studies: Economic Valuation of Ecosystem Services from Kihansi Catchment and Economic Analysis of water use of Lower Kihansi Hydropower Plant.			
<b>► Legal establishment of national protected area (gorge, catchment and water sources) (Yes/No, Custom)</b>				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	No	No	No	Yes
Date	17-Jun-2016	31-May-2018	30-Nov-2018	31-Dec-2019
Comments:	The survey of the proposed Environmentally Protected Area has been conducted in consultation with the surrounding communities in the 22 affected villages, and the beacons have been put in place. The final gazettement of the area cannot be finalized until land matters are resolved between government ministries, which has jurisdiction. These include the Tanzania Forest Services (TFS) under the Ministry of Natural Resources and Tourism; National Environmental Management Council (NEMC) under the Division of Environment, Ministry of Environment and Union Affairs and the Vice President's Office; and TANESCO which is under the Ministry of Energy and Industry.			
<b>► Catchment management plan developed and approved by Rufiji Basin Water Board. (Yes/No, Custom)</b>				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	No	Yes	Yes	Yes
Date	17-Jun-2016	31-May-2018	30-Nov-2018	31-Dec-2019
Comments:	Kihansi Catchment Management Plan was approved in April by Rufiji Basin Water Board (RBWB). Implementation of the plan is on-going under supervision of LGAs and RBWB.			
<b>► Area of functioning spray irrigation system in the Gorge. (Hectare(Ha), Custom)</b>				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	1.50	2.00	2.00	2.00
Date	17-Jun-2016	31-May-2018	30-Nov-2018	31-Dec-2019
<b>► Operational guidelines for conducting environmental flow assessment developed and approved by National Environment Management Council and Ministry of Water. (Yes/No, Custom)</b>				



	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	No	No	No	Yes
Date	17-Jun-2016	31-May-2018	30-Nov-2018	31-Dec-2019
<b>Component 2: Conserve endangered species in the Kihansi catchment</b>				
<b>►New areas outside protected areas managed as biodiversity-friendly (ha) (Number, Custom)</b>				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	9.00	9.00	9.00	5,500.00
Date	24-Nov-2014	31-May-2018	30-Nov-2018	31-Dec-2019
Comments:	Out of 3471.66 ha already demarcated for the proposed Kihansi Environmental Protected Area (KEPA) only 285.489 ha (8.22%) is within the Njerera Forest Reserve. The ongoing exercise by the project to confirm the boundaries will determine the area which will be accorded protection.			
<b>►Chytrid disease controlled (foot sterilization baths at entry points to the gorge and spray wetlands, biological control of Chytrid). (Yes/No, Custom)</b>				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	No	No	Yes	Yes
Date	17-Jun-2016	31-May-2018	30-Nov-2018	31-Dec-2019
Comments:	Due to the past outbreaks of chytrid fungus in the UDSM and Kihansi captive breeding facilities, and because chytrid fungus was almost certainly the cause of the sudden collapse of the KST population in the Kihansi Gorge in 2003, actions were conducted in the Kihansi Gorge to reduce the likelihood of reintroduction of chytrid fungus into the gorge. One of the actions was to construct new concrete sterilization baths at the entrance of the Upper, Lower, Mid-Gorge, and Mhalala Spray Wetlands and at the top and bottom of the gorge. A new shed was also constructed over the concrete sterilization bath and bench at the bottom gorge. All the sterilization baths have brushes to clean boots and the chlorine disinfecting solution is changed weekly.			
<b>►Villages using integrated pest management strategies (cropping, use of pesticides). (Number, Custom)</b>				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	0.00	0.00	14.00
Date	17-Jun-2016	31-May-2018	30-Nov-2018	31-Dec-2019
Comments:	Integrated Pest Management Plan (IPMP) packages have been approved and the popular Kiswahili versions have been prepared. The IPMP packages have been printed and distributed and utilization of the IPMP packages will commence with by this cropping season.			
<b>►Important water sources managed in three districts that form Kihansi sub-catchment according to Kihansi Catchment Management Plan. (Percentage, Custom)</b>				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	0.00	0.00	100.00
Date	17-Jun-2016	31-May-2018	30-Nov-2018	31-Dec-2019
Comments:	Following the identification and mapping of water sources in the three riparian districts, RBWB and LGAs are working with the Water Users Associations to develop management plans for the important water sources.			



►Direct project beneficiaries (Number, Custom)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	1,216.00	1,216.00	3,000.00
Date	24-Nov-2014	31-May-2018	30-Nov-2018	31-Dec-2019
▲Female beneficiaries (Percentage, Custom Supplement)				
	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	12.00	12.00	50.00

## Data on Financial Performance

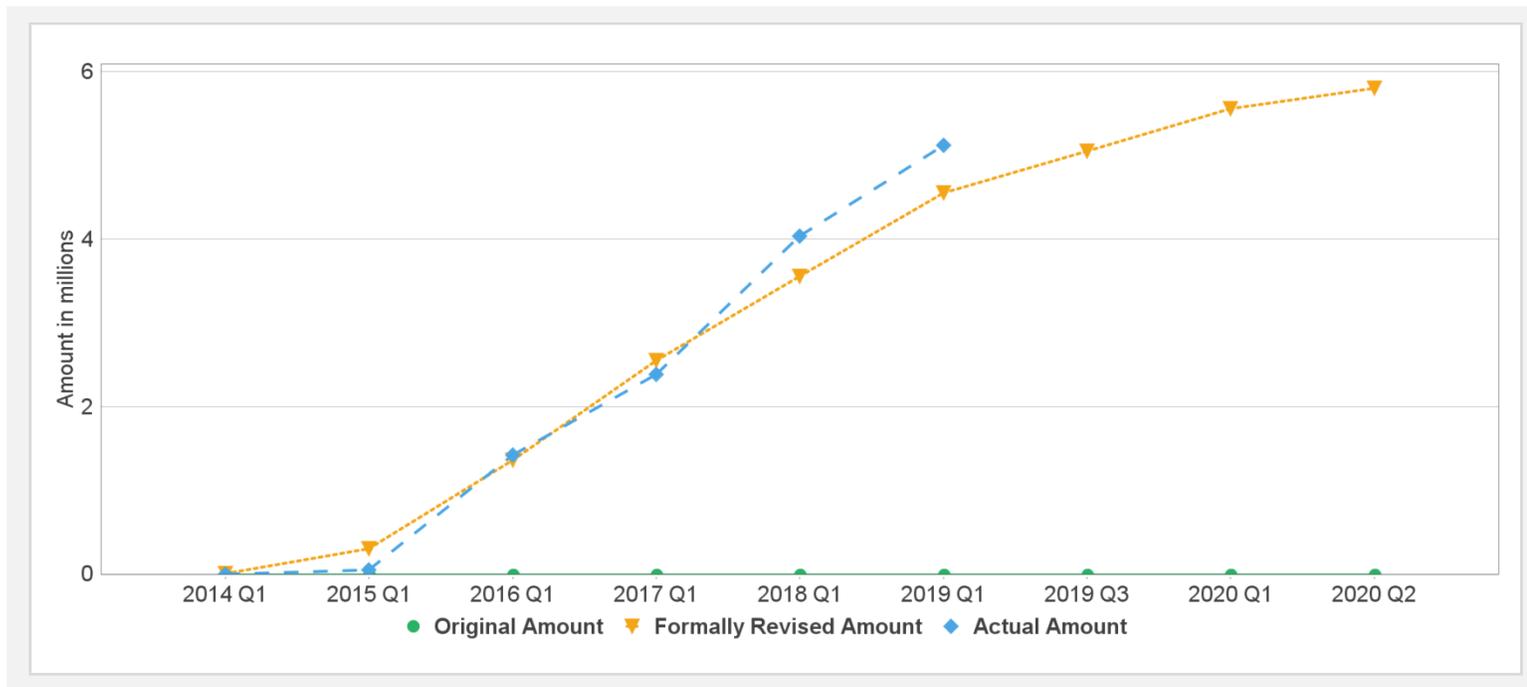
### Disbursements (by loan)

Project	Loan/Credit/TF	Status	Currency	Original	Revised	Cancelled	Disbursed	Undisbursed	% Disbursed
P126361	TF-15774	Effective	USD	5.98	5.98	0.00	5.12	0.86	86%

### Key Dates (by loan)

Project	Loan/Credit/TF	Status	Approval Date	Signing Date	Effectiveness Date	Orig. Closing Date	Rev. Closing Date
P126361	TF-15774	Effective	02-Dec-2013	02-Dec-2013	02-Dec-2013	31-Dec-2018	31-Dec-2019

### Cumulative Disbursements



### Restructuring History

Level 2 Approved on 23-Jun-2017

### Related Project(s)

There are no related projects.