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Cairo University

IMPACT ASSESSMENT OF THE PROPOSED WATER RESOURCES DEVELOPMENT PROJECTS IN THE TEKEZE ATBARA SETIT BASIN ON NILE FLOW AT ASWAN

By

Ahmed Moustafa Hafez Mohammed

A Thesis Submitted to the
Faculty of Engineering at Cairo University
in Partial Fulfillment of the
Requirements for the Degree of
MASTER OF SCIENCE
in
Irrigation and Hydraulics Engineering

FACULTY OF ENGINEERING, CAIRO UNIVERSITY
GIZA, EGYPT
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Under the Supervision of

Prof. Dr. Ahmad Wagdy Abdeldayem

Dr. Mohammed ElSayed Abou El-Haggag

.....
Professor of Hydrology
Irrigation and Hydraulics Department
Faculty of Engineering, Cairo University

.....
Associate Professor
Irrigation and Hydraulics Department
Faculty of Engineering, Cairo University

Dr. Hany Gomaa Ahmed ElSayed Radwan

.....
Associate Professor
Irrigation and Hydraulics Department
Faculty of Engineering, Cairo University

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Approved by the Examining Committee:

Prof. Dr. Ahmed Wagdy Abdeldayem

Thesis Main Advisor

Professor of Hydrology, Irrigation and Hydraulics Department, Faculty of Engineering,
Cairo University.

Dr. Mohammed ElSayed Abou El-Haggag

Advisor

Associate Professor, Irrigation and Hydraulics Department, Faculty of Engineering,
Cairo University.

Prof. Dr. Khaled Hussein Hamed

Internal Examiner

Professor of Hydraulics, Irrigation and Hydraulics Department, Faculty of Engineering,
Cairo University.

Prof. Dr. Mohamed Mohamed Noor Eldin Fayed

External Examiner

Professor of Irrigation and Drainage, Irrigation and Hydraulics Department, Faculty of
Engineering, Ain-Shams University

FACULTY OF ENGINEERING, CAIRO UNIVERSITY
GIZA, EGYPT

2019

Engineer's Name: Ahmed Moustafa hafez Mohammed
Date of Birth: 20/07/1989
Nationality: Egyptian
E-mail: s-amh052@fayoum.edu.eg
Phone: 002-01012249902
Address: Menia El Heit, Etsa, Al Fayoum, Egypt
Registration Date: 01/10/2013
Awarding Date:/....../2019
Degree: Master of Science
Department: Irrigation and Hydraulics Engineering



Supervisors:

Prof. Ahmad Wagdy Abdeldayem
Dr. Mohammed ElSayed Abou El-Haggag
Dr. Hany Gomaa Ahmed ElSayed Radwan

Examiners:

Prof. Ahmad Wagdy Abdeldayem (Thesis Main Advisor)
Professor of Hydrology, Irrigation and Hydraulics Department,
Faculty of Engineering, Cairo University.
Dr. Mohammed ElSayed Abou El-Haggag (Advisor)
Associate Professor, Irrigation and Hydraulics Department, Faculty
of Engineering, Cairo University.
Prof. Khaled Hussein Hamed (Internal Examiner)
Professor of Hydraulics, Irrigation and Hydraulics Department,
Faculty of Engineering, Cairo University.
Prof. Mohamed Mohamed Noor Eldin Fayed (External Examiner)
Professor of Irrigation and Drainage, Irrigation and Hydraulics
Department, Faculty of Engineering, Ain-Shams University

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Impact Assessment of the proposed water resources development projects in the Tekeze
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Summary:

Nile River is considered the primary renewable source of water to Egypt. Nile Basin could be divided into two main sub-basins. Eastern Nile sub-basin is the major one that contributes with about 85% of water inflows that arrives at Aswan. Tekeze Atbara Setit is one of the main tributaries of the Eastern Nile sub-basin that lies in Ethiopia and Sudan. Tekeze Atbara Setit is a target for many water resources development projects such as hydropower projects and irrigated agriculture. These projects may have negative impacts on downstream countries. This study introduces a hydrological model for Tekeze Atbara Setit to generate river system flows, which is then coupled with river and reservoir simulation model to simulate current flow conditions in addition to simulate different development scenarios in order to assess their impacts on High Aswan Dam.

Disclaimer

I hereby declare that this thesis is my own original work and that no part of it has been submitted for a degree qualification at any other university or institute.

I further declare that I have appropriately acknowledged all sources used and have cited them in the references section.

Name: Ahmed Moustafa Hafez Mohammed

Date: ../../...

Signature:

Dedication

I would like to dedicate this thesis with love to my parents “Moustafa Hafez and Hana Sobhy” for their love, support and encouragement through my entire life because without them, I am nothing. Also, I would like to dedicate this thesis to my beloved Wife “Basma Hamada” who always stands by me and supports me.

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