CAIRO UNIVERSITY’S REPORT ON ETHIOPIA’S GREAT RENAISSANCE DAM

The Cairo University professors and experts in the faculties of engineering and agriculture have formed a group called “Group of Nile Basin” (GNB) and this group prepared extremely important report about the Ethiopia’s great Renaissance Dam. The report was published in Arabic on Facebook by Dr. Nader Noor El Din, a member of the GNB and it was republished once again by famous Kolena Khaled Said Page. Thanks to Mr. Ashraf El Shehat, this report has been translated to English. Without his help I do not know what I could have done. This report represents the Egyptian objections based on science not based on politics or any other thing.

Group of Nile Basin (GNB) at Cairo University to Support Egypt

INTRODUCTION

A series of external challenges have suddenly appeared on the surface forming major threats to securing the water supply to Egypt. The sources of these threats are the new plans by the Ethiopian Government to construct four dams on the Blue Nile (Figure 1).
However, the major threat was the sudden unilateral announcement of the Ethiopian Government to divert the course of the Blue Nile marking the actual start of construction of the Great Ethiopia Renaissance Dam (GERD) without consultation with the downstream countries; Egypt and Sudan. This act in the eyes of the majority of Egyptians amounts to a flagrant assault on all the basic fundamental laws and the international norms. Figure 1 - Plan of construction four new dams in Ethiopia endangers the only water supply to Egypt.

Considering the major threat to the people of Egypt, a group of professors from the Department of Irrigation and Hydraulics, Faculty of Engineering, Cairo University formed a group titled “The Group of the Nile Basin” (GNB). The purpose of the group is to support the effort of Government and the decision makers facing these serious escalating water threats. The scope of GNB shall include analytical studies of the Ethiopian Dams, prepare and implement numerical water models to study the side effects of these dams and collecting all recent scientific studies in this field.

THE GNB ACTIVITIES

The members of the GNB include - among others - four Professors who were involved and still directly involved in the review studies of the Ethiopian Dams and assessing their effects in cooperation with the Ministry of Water Resources and Irrigation (MERI) since the year 2010. The GNB shall be also working closely with both the National and International Committees involved in studying the consequences of the construction of GERD.

On 16th April 2013, the GNB has conducted two workshops at Faculty of Engineering, Cairo University about the technical, political and legal consequences of constructing the GERD. The attendees included numerous University Professors and Experts in different fields of specializations. Representatives of MERI, some Political Parties, management of Engineering Syndicate in addition to numerous media channels. The purpose of the workshops was to spread the awareness among the people and the Government bodies about the challenges and threats facing the country.

The last few days have witnessed a series of escalating and accelerating steps adding to
the tensions including the unilateral decision of Ethiopia to divert the Blue Nile, and the subsequent objections of some of the Egyptian Politicians during an aired meeting with the President. On 13th of June 2013, the Ethiopian Parliament ratified the Nile River Cooperative Framework Agreement opposed by Egypt which ends the veto granted to both Egypt and Sudan on all projects constructed by the upstream countries of the Nile Basin.

**MAJOR COMMENTS FROM THE TRIO COMMITTEE**

An international committee - called the Trio Committee - was formed based on the proposal of the Ex. Ethiopian Prime Minister M. Zenawei about two years ago to reduce the tension. The committee concluded its work that took around a year and half and issued its report on the review of the studies presented by the Ethiopian Government. The trio committee consisted of 10 members; 2 from each of Egypt, Sudan and Ethiopia, and four international experts approved by the three countries. The committee has recently concluded its review and issued its report with the following conclusions:

1. There are no sufficient structural studies.
2. There is a lack in the hydrological investigations.
3. There are no environmental impact assessments on the two downstream countries; Egypt and Sudan.

In addition, the Ethiopian Government failed to submit advanced studies reflecting the details and reliability analysis to meet the minimum requirements of the international standards for similar size of dams. Such lack in information and the weakness of the studies formed an obstacle in enabling the Trio Committee to assess the structural safety of the dam and the negative impacts on both Egypt and Sudan.

**AREAS OF CONCERN TO BE CONSIDERED BY THE EGYPTIAN GOVERNMENT**

The GNB draws the attention of the members of the Egyptian Government to the consequences of the Ethiopian Dams which constitute a series of tough social, economical and political nature that are hard to be controlled or to tolerate. Some of these consequences are:

1. The plan for the 4 dams on the Blue Nile aims at total control of the water in the Blue Nile which is the main supplier to the Nile. As such, this plan shall subsequently include total control of the share of Egypt’s share of the water in the Nile and the possible redundancy or at least dwarfing the role of the High Dam in securing the future supply of water to Egypt.
2. The current design capacity of GERD of 74 Billion cubic meter will have harsh negative impact on the share of the water reaching to Egypt and also on the production of electricity from the High Dam and the Aswan Dam during the filling period of the lake of GERD and during its operation. This negative impact shall escalate during the drought period wherein the water supplies to both Egypt and Sudan shall conflict with the water needed to produce the electricity from the GERD.
3. Reduction in the water share of Egypt will result in abandoning huge areas of agricultural lands and scattering millions of families. It would also result in
increasing the pollution of the water streams and creating problems in the supply of water for drinking and industry. There will also be problems in river transportation, Nile tourism and threats to the fish farms.

4. Collapse of GERD will result in catastrophic effects in both Sudan and Egypt. This includes failures of dams, drowning of major towns and villages and exposing millions to the dangers of death and relocation.

TARGET OF NEGOTIATION: MITIGATE THE DAMAGE

Basically, it should be understood that negotiation with Ethiopia has been drastically delayed. The ideal target for the negotiation from Egypt’s point of view would be to prevent constructing the dam. However, this is no longer a valid option considering the current circumstances. Ethiopia has managed to place the dam as a fact and no longer a theory. As such, the purpose of the negotiation at this stage would be aiming at mitigating the damages.

Considering the above, the following are the suggestions:

1. Request stopping the construction at once until completing the negotiation and assess the effects through scientific means and agree on them. We need to highlight here that there are other alternatives that can be studied to fulfill similar advantages to Ethiopia without causing major damages to the downstream countries.

2. The minimum requirement for the Egyptian Government should be the maximum size of the Dam not to exceed 14 billion cubic meter as per the proposal prior to the January 2011 Revolution. This capacity would enable producing 60% of the proposed electricity from GERD and with efficiency exceeding double the efficiency of the huge GERD and with much less cost and much less negative impacts that can be lived with. In addition, the proposed design of 14 cubic meters would fulfill most of the advantages of Sudan from GERD and as such, unifies the points of views of both Egypt and Sudan.

3. Ethiopia to commit officially not to use the water behind the GERD for the agricultural purposes as previously announced.


5. The design of the GERD to be reviewed thoroughly by Egyptian Experts after amending the technical dimensions to ensure its structural safety.

The GNB further urges all non-specialized personnel to avoid getting into issuing irresponsible statements that justify the illusionary benefits of the GERD, issuing statements with no real value, or statements that may underestimate the serious side effects using unfounded methods. All the positive and negative impacts are actually a result of intensive, thorough and specialized engineering investigations. Some of these investigations have been carried out by the members of GNB and some are still being conducted. The results at this stage agree broadly with the international studies and to some extent with the Ethiopian studies presented to the International Trio Committee, even though the latter are incomplete.
Main Focus: Downsizing

We would like to warn the Government not to limit the scope of negotiation to secondary issues and ignore the major problem; the size of the dam. The people in Egypt should be aware that focusing the negotiation on the number of years to fill the lake of the dam or the operation policy of the dam including participating with the operation of the dam are of no prime importance. The major threat is the result of the magnified size of the dam. Without reducing the dimensions of the dam itself, the major negative impacts as indicated above are unavoidable.

It is not a secret that throughout the history, Egypt has never been an obstacle preventing the development in the African Nations in general and the countries of the Nile Basin in particular. Egypt has always been supporting the projects of common benefits to the people of the Nile Basin including building Owen Dam for the benefit of both Uganda and Kenya, has shown no objection for building Tecjizy Dam and Tana Plus Tunnel in Ethiopia, and also has not objected the building of Marwe Dam or increasing the height of Roserus Dam in Sudan. All of these projects and others help to improve the revenue of the brothers and sisters of the African Nations. Egypt has always maintained and is willing to keep the Nile as a uniting force for the people of the nations and not a source of disperse or dispute. Egypt is willing to maintain the Nile basin to remain an oasis for peace and not a battlefield.

MEMBERS OF THE GNB

1. Mohamed N. E. Allam - Ex. Minister of Water Resources & Irrigation
2. Mohamed S Bazarah - Prof. of Irrigation and Drainage
3. Alaa Al-Zawahry - Prof. of Hydraulic and expert of dams and member of the National Committee of GERD.
4. Mohamed S. El-Manadily - Prof. of Hydraulics - Chairman of Department of Irrigation and Hydraulics, Faculty of Engineering, Cairo University.
5. Nader Nour Eddin - Prof. of Water Supplies and Lands, Faculty of Agriculture, Cairo University
6. Ahmad E. Hasan - Prof. of Hydrology, Faculty of Engineering, Cairo University.
7. Khaled H Hamid, Prof. of Wter Supplies, Faculty of Engineering, Cairo University - Member of the Trio Committee
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10. Mohamed H Algamal, Prof. of Hydraulics, Faculty of Engineering, Cairo University.
11. Hesham B Mohamed, Prof. of Water Supplies, Faculty of Engineering, Cairo University. Member of the National Committee to study GERD.
12. Mohame E Abol Hagag, Prof. of Hydraulics, Faculty of Engineering, Cairo University.