I. Reality

Fresh water supply is the single most deciding ingredient of life. Neither terrestrial plants nor human beings can survive without fresh water. Unfortunately, nature is so skewed that fresh water distribution across the globe is spatially and temporally erratic. Some tropical countries like Brazil and DR Congo are endowed with excess fresh water in the form of precipitation, rivers, lakes and ground water. Contrary to this abundance in tropical Africa and Latin America, the Middle East, North Africa and Horn of Africa are highly water stressed. For instance, Egypt receives a negligible precipitation forcing it to rely on Nile River for 97% of its fresh water supply. So does Sudan its substantial demand. Except three months of rainfall from mid June to mid September in the highlands, Ethiopia is dry for three quarters of the year.

Eleven countries share the Nile basin. From the river’s annual flow, three tributaries originating from Ethiopia contribute 86% of the water flow and 95% of the fertile soil. Yet again by nature’s formula, the River basins of three tributaries of Nile (Baro-Akobo, Abay and Tekeze) cover a little less than one third of Ethiopia’s surface area. But in terms of annual precipitation, these three tributaries of Nile account more than 70% of the annual surface water flows of Ethiopia. The remaining two-thirds of Ethiopia is highly water stressed comparably like that of Egypt and Sudan.

The flow of the Nile itself is rather small when one compares it with great rivers like Amazon, Congo, Mississippi, etc. For instance, the flow of Nile at its maximum year is a mere 2% of that of Amazon River and a little over 10% of the Congo River. This clearly foretells that even the major Nile flow contributor Ethiopia itself is water starved when compared with DR Congo and Brazil. That being the reality, Ethiopia utilized almost nothing of Nile so far. If one compares the annual irrigation water utilization of the three Nile countries, Ethiopia utilizes 0.2 billion cubic meters, Sudan 27.1 billion cubic meters and Egypt 40.0 billion cubic meters to develop 0.02, 1.93 and 3.1 million hectares respectively. This shows that Ethiopia utilized only 0.22% of the water it is contributing to the Nile. Please refer Table 1 and Figure 1 below.

Table 1: Water flow contribution and irrigation utilization of Nile River

<table>
<thead>
<tr>
<th>Country</th>
<th>Annual Water flow contribution to Nile (BM³)</th>
<th>Irrigation potential (ha)</th>
<th>Developed Irrigated land (ha)</th>
<th>Irrigation Water requirement (M³ per ha)</th>
<th>Water utilized for irrigation per year (BM³)</th>
<th>Water consumed versus water contributed (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethiopia</td>
<td>87.7**</td>
<td>2 220 000</td>
<td>23 160</td>
<td>9 000</td>
<td>0.2</td>
<td>0.22</td>
</tr>
<tr>
<td>Sudan</td>
<td>2.5***</td>
<td>2 750 000</td>
<td>1 935 200</td>
<td>14 000</td>
<td>27.1*</td>
<td>1 083</td>
</tr>
<tr>
<td>Egypt</td>
<td>0.0</td>
<td>4 420 000</td>
<td>3 078 000</td>
<td>13 000</td>
<td>40.0</td>
<td>Undefined****</td>
</tr>
<tr>
<td>Total</td>
<td>90.2</td>
<td>9 390 000</td>
<td>5 036 360</td>
<td>67.29</td>
<td><strong>Mathematically meaningless to divide by zero denominator.</strong></td>
<td></td>
</tr>
</tbody>
</table>

Source: Extracted from FAO website which in turn is based upon 1990 data.
+May include rainfall
++ From Basin Studies in Ethiopia. Part of it is lost to evaporation in the sudd, South Sudan
+++ Including South Sudan
++++ Mathematically meaningless to divide by zero denominator.

1 Their other names in Sudan are Sobat, Blue Nile and Atbara respectively
While Ethiopia is a synonym with famine and poverty, the water originating from its highlands has not been utilized in reversing this dehumanizing syndrome. Instead, Egypt and Sudan have been using it at the heart of the Sahara desert, lavishly and extravagantly. From the above table, one can easily see that the irrigation water requirement for Ethiopia, Sudan and Egypt are 9,000, 14,000 and 13,000 cubic meters per single hectare. In other words, for every hectare of land under irrigation, Sudan needs additional 5,000 cubic meters of Nile water more than Ethiopia needs and Egypt needs 4,000 cubic meters more of the same. The technical reason behind is that due to the predominantly highland geography and resulting afro-alpine climate, evaporation losses are considerably less in Ethiopia than the two lower riparian countries.

![Irrigation potentials and utilization in the Nile basin](image)

**Figure 1: Irrigation potentials and utilization in the Nile basin**  
*Source: Extracted from FAO data*

Now, Ethiopia is coming forward for the equitable utilization of its water resources. Because of its geography, Ethiopia’s comparative advantage is Hydropower development followed by irrigation. The Great Renaissance Dam (GRD) is the largest of all possible hydropower projects in the basin. There is also a considerable land suitable for irrigation.

If Ethiopia is to lift millions out of poverty and thrive in this century, it has no other viable option than using its human and natural resources. Of all the natural resources Ethiopia has, water comes first. As 70% of the Ethiopian surface water sources are found in the Nile basin, there is no other dependable choice than sharing the Nile with our downstream brothers and sisters. In fact, Ethiopia’s explosive population growth witnessed in the last four decades is the major pressing factor for immediate utilization. Like Egyptians and the Sudanese have mouths to feed and houses to electrify, Ethiopia does have the same. There is no substantive reason that Egypt should benefit and Ethiopia lose. No human being is superior to the other! Sharing the water equitably remains the only sane option.
II. Contentions on Nile Water

Egypt, solely dependent on Nile, has been wary of the reduction of the flow of her lifeline. In order to ensure the uninterrupted flow of the river, Egyptians used whatever means under their capacity. Their worry is understandable. What is sickening is the pervasive selfishness and arrogance their successive regimes have been exhibiting until now. What was witnessed in the live TV ‘gaffe’ last week was nothing less than proclaiming war on a sovereign nation. They have been doing this for centuries and seem to continue in the same way. The only difference around this time is what they thought a secret discussion (for at least some of the politicians) has been aired to the entire world. Interestingly, I read one subtle comment from one acute Egyptian observer saying “the only secret discussion in the world (that was) aired live”.

While the intention of the live discussion will be scrutinized by security and strategy experts, it was a blessing in disguise for Ethiopia. The world has witnessed the arrogance of the Egyptian politicians without Ethiopia assigning anyone diplomat for disclosing Egypt’s inflexible perverse stance. Just today, President Morsi has publicly said that all options are on the table which clearly means including sabotage and military attack.

Unlike Irrigation, hydropower projects do not consume water. The dam benefits not only Ethiopia but also Sudan, Egypt and other countries in the region\(^2\). The only adverse physical impact Egypt may face is reduction of flow during the filling of the dam. This problem is technically easy to address. Filling the dam in 3 to 5 years time may be a good solution than making it within a year or two. Although that costs Ethiopia in terms of extended invested capital recovery time, the survival and life of our brothers and sisters downstream should not be compromised as well. This way, Ethiopia should continue offering its good gesture like it did in the past.

While such and such technical solutions are plenty, Naïve Egyptian politicians continued airing discussions on the means of sabotaging the dam including a military attack. After the news of the ‘gaffe’, I could not help but forwarded the following comment. ‘Egypt, a cradle of human civilization is infested with naïve politicians. What decadence!’

III. Egypt’s options and Ethiopia’s likely counter measures

Egypt’s arrogant regimes lost their cards of sabotaging Ethiopia turn by turn. Now it seems they have few options: sane and insane. The sane option is to cooperate through understanding realities of its southern neighbors and its own situation. Obviously, the sane option is sooner or later to dominate the Egyptian public. Although there is a discernable idea shift towards this sane option, it may need some more time to mature. In the mean time, emotionalism and arrogance may override dwarving the sane options. The live TV ‘gaffe’ and continued brandishing is a direct indication to this ill-fated option.

At this juncture, it let us forward two critical questions. What insane ideas do the bad boys of Egypt have at hand? What insane measures is the government of President Morsi to take? We can comfortably guess the following: the semi-sane soft power option, quasi military and the direct military options.

\(^2\) Please read my previous two articles on Nile with titles: (1) “Egyptian Mega Projects on the Nile: repercussions and implications to Ethiopia” and (2) “The Sensational News of “Diversion” of the Blue Nile River” from Google or aigaforum by simply searching the title.
1) The Semi-sane soft power option

The semi-sane soft power option may follow an aggressive marathon diplomacy that lifts the Morsi government from the defensive to the offensive side. As a first step, they will try their level best to bulldoze Ethiopian diplomacy through public diplomacy, direct security staff briefings, ministerial and presidential level incessant pressure through which they indirectly express their military, economic and/or diplomatic might and so forth. In the sidelines of bulldozing diplomacy, they may instigate diplomatic saga, from creation to aggravation of any misunderstandings between Ethiopia and its neighbours. One immediate flash point will be pulling the Eritrean border issue from under the carpet. Egyptians may try their best to create suspicion and mistrust between Ethiopia and the Sudan. Another area is trying their best to frustrate relations Ethiopia is enjoying with Djibouti and the nascent Somali government. They will also attempt to misguide international civic organizations towards defaming Ethiopia. So on and so forth. If Ethiopia follows a pro-active diplomacy, the bulldozing diplomacy can be easily neutralized.

Egypt’s relationship is somehow intertwined with the other Arab nations across the Red Sea. It may be possible for Egypt to mislead some leaders from the region, particularly from the Gulf States. This may help them in threatening with seemingly wider Arab economic sanctions against Ethiopia. They may also seal the Suez Canal and Ethiopian ships may be forced to sail long distances towards Europe. This will have economic implications to Ethiopia. But, it is not something intolerable. Also, Gulf States have their own interests in Ethiopia and the rest of Africa which they do not like to risk for the sake of Egypt. In fact, Egypt itself borrowed too much money in the last two years from the Gulf States, putting her in the lower side of influence.

The other semi-sane option Egypt may follow is the legal avenue. Egypt may take a legal action in the international arena to sue Ethiopia on the usage of Nile waters. Ethiopia has never been a party neither to the colonial treaties nor to any bilateral agreements of legal effect. Additionally, who in the 21st century instructs a sovereign state not to use its natural resources in so far as the lower riparian states are not adversely affected? At the end of the road, this avenue will have nothing but a bulk of papers. Rather, the verdict will push Egypt to the tails of civilized international diplomacy.

Still another semi-sane option is disseminating anti-Ethiopia propaganda. President Nasir had Amharic and Somali service radio stations in Egypt solely meant for fomenting unrest in Ethiopia. Egyptians will do the same using all available media options. The bad boys may even go further to humiliating Ethiopians particularly focusing those maids in the Middle East. They will inarguably work to sow hatred to Ethiopia and Ethiopians in the Middle East. Given that Arab women are not exposed to advanced education, they may be easy prey to this devilish propaganda. This can be curbed if the government and people of Ethiopia closely follow up and pro-actively respond to such actions.

2) Quasi-military option

This option may be concurrently done with the semi-sane soft power option. Sabotaging and proxy wars will be the likely choices in this regard. Egypt’s security apparatus has been busy doing these options for about 60 years. In fact, if there is anything of quality to this security apparatus, sabotaging Ethiopia and Sudan tops from any list it may have.

The sabotage at this time may involve infiltrating some commandos to the dam site and trying to blow it up. The other option is to use political dissidents, training and arming them towards creating security
problems around the construction site. Still in some other fronts, instigating unrest and security threats to Ethiopia, using Eritrea and Somalia as launch pads may be opted. The last sabotage method may be using religious lines for a wider national unrest. If the emotions continue as they appeared last week, the Egyptian security may covertly move as far as closely working with the wilting Al Shabab and other Al Qaida affiliated groups. The other thing the bad boys of Egypt may do is sabotaging plant and equipment of the dam in international waters while en route to Ethiopia. In terms of proxy wars, the only choice will be Isayas of Eritrea.

As the Ethiopian security system has successfully foiled several attempts in the past, there will be nothing different at this time. Whatever armed group comes can be easily followed up and neutralized before inflicting any damage. The commando option can also be completely annihilated by the Ethiopian military long before approaching the border. Isayas Afeworki is too weak to engage in war at this time. If he does so, he knows that he will easily be beheaded. Following the religious line for unrest, if at all any comes, is also unlikely to address Egyptian interests. Every Ethiopian knows what the bad boys of Egypt have been doing against Ethiopia until this time.

Sabotaging plant and equipment of the dam while en route can be avoided using other navigation routes. Even when inevitable, Ethiopia can take a measure that can bring economic and diplomatic crisis to Egypt. Working with Al Qaida linked groups will also completely detach Egypt from the international community. If the Egyptian security does it very covertly, still Ethiopia can easily counter it. If Egypt still continues its stubborn stance of selfishness and arrogance, they will act into direct military invasion.

3) The military option and brinkmanship

The third option Egypt will be left with is direct military invasion and attack. In this case, Egypt has the option of attacking Ethiopia by air or by land. It also chooses the best time of attack. As Ethiopia is land locked country, naval forces cannot be directly involved. Let us consider the two possible attack options one by one.

a) Probable time of attack

One can easily guess that if the bad boys of Egypt come to the conclusion of a military attack, the most likely time will be after a year or so. The foundation excavation of the GRD dam has just started and the dam construction will progress as scheduled. Attacking at this time is nothing more than bombing a natural rock foundation. As any wicked person may do, the bad boys will choose the timing of the attack to cause a catastrophic loss to their ill-perceived enemy, Ethiopia. Certainly, they will choose the time of attack when the concrete is high above the ground but surely before it starts storing water. That will help them frustrate Ethiopia’s ambitions while at the same time caring for Egypt and Sudan from the floods of the collapsing dam. In the mean time they will continue in the Quasi-military option and the bulldozing diplomacy with too much of rhetoric.

b) Air-raid

Although the Egyptian air force is equipped with a large number of war planes than any other country in the region, it does not own attack air craft capable of flying thousands of miles. Even if it has, it requires using the Sudanese or Eritrean air space. Neither Egypt owned the stealth technology to fly without the knowledge of Sudan. Since Egypt and Ethiopia do not share borders, Egypt cannot directly attack Ethiopia without the willful or forced cooperation of these two neigbours. In order to have a launch pad, Egyptians may even go as far as forcing Sudan. Other neighbors cannot be thought in this regard.
The Ethiopian air defense system is impenetrable than ever before. A recent military exhibition in Addis Ababa has shown to the public how advanced it is. In the event that either Sudan, Eritrea or both are to be used as launch pads in attacking Ethiopia, the Ethiopian military will not wait idle. It has already prepared itself long time ago. Asmara and Assab airports are always under the direct surveillance of Ethiopian military radar system enabling it act as swiftly as practicable. Any attack air craft coming from the Sudanese air space can also be blown in the air before reaching the border. The air-raid option of military attack is doomed to fail long before it drops a bomb. In a counter measure, the Ethiopian military will definitely take a lightning attack on any Egyptian interest and any cooperating neighbour. Egyptian security and military experts including those in neighbouring countries definitely know the capacity and the likely measures Ethiopia may take.

c) Ground attack

Egypt is a country having an estimated a million and half number of soldiers. Its ground force is the largest in Africa and the Middle East. Still in the ground attack, Egyptians may use both Sudan, Eritrea and a remote possibility will be Somalia. They have to transport tens of thousands of soldiers and military hardware all the way from Egypt to Sudan and Eritrea.

First and foremost, this is not feasible from economic point of view. Given the present fragile Egyptian economy, it is highly unlikely that Egyptian strategists take this risky decision. If we think that some gulf states have supported them in financing the war, they still have to dock ships and disembark soldiers in Assab, Massawa, Berbera or Mogadishu ports. Using massive airlift from Cairo to Asmara, Khartoum and Mogadishu may be other options for transporting the soldiers. Additionally, they will come by land deep into Sudan and closer to Ethiopia.

Given that such military preparations and mobilizations are easily understandable beforehand, the Ethiopian air force can precisely blow them up while docking at the Red sea or Indian Ocean ports. Even the Ethiopian ground forces can easily gallop and completely annihilate Egyptian forces before they fortify any garrisons in Eritrea and Somalia. I do not think that the Egyptian military personnel miss the active presence of the Ethiopian military in Somalia. So do they know that the red sea port of Assab is just 57km from the Ethiopian border and Asmara is at a shooting range from Mekalle.

Sudan may allow its air space and ground to Egyptian forces either willingly or forced by the might of Egyptian forces. If forced, Ethiopia will stand by the side of the Sudanese in countering Egyptian adventures. On the other hand, when Sudan allows Egyptian ground forces willingly, then Sudan will be the battle ground. It is highly likely that some forces in Sudan will be supporting Ethiopia and some others may align themselves with Egypt. When it is the only alternative to secure Ethiopia’s sovereign rights, the Ethiopian military forces may advance deep into Sudan until it makes Egyptian interests under a shooting range. If this scenario holds, the entire region will turn to a complete mayhem. For Ethiopian military forces, dipping Isayas into the red sea is the easiest of all.

The military adventure of Egypt will surely last in utter failure. What then is the motive behind the military option? Why all the brandishing at this time?

d) Brinkmanship and concessions

Egyptian military well knows that a military confrontation with Ethiopia is not an easy task to engage with. Although the military hardware of Egypt is quite enormous, most of it is obsolete and ineffective. The last 60-years of military combat by Egyptian forces were an embarrassment to the nation than a
history to reckon with. It lost to Israel three times in less than 20 years time to which the nation succumbed to peace agreement based upon the terms of Israel. Egypt’s confrontation with the forces of Gaddafi of Libya was also recklessly handled. President Morsi recently dispatched tanks to crush mobile guerrilla armed Islamists in the Sinnai. One can easily comment that it was a costly and ineffective means.

Contrary to this fact, Ethiopia’s defense forces have considerable experience in both combat and peacekeeping missions. Though outnumbered in the number of military hardware and soldiers, Ethiopia owns quality arsenal of advanced technology and a practically tested disciplined military staff ready to crush any invading force at any cost.

Thus, the strategy of Egyptians in the military option is different. They want to create a near crisis and grab the attention of the international community so that Ethiopia will be diplomatically pressured. By doing so, they may think Ethiopia retreats from its actions for fear of attack and diplomatic pressure. It is also likely that Egyptians may think Ethiopia will bow down to the terms and conditions of Egypt by signing an agreement of legal effect that gives veto power to Egypt. Another possibility is to scare any potential financiers from assisting Ethiopia so that Ethiopia faces failure. Whatever way Egyptians think, this brinkmanship approach is an obsolete strategy to which Ethiopia is well-prepared in advance.

IV. Reactions of the International community

The international community will not sit idle and see when the entire region is awashed with arms and drifting into irreversible crisis. For obvious reasons of irrationality, Egypt’s bad boys will be trimmed by the civilized international community. Even when this is not there, Ethiopia fully depends on its children from financing GRD to defending its sovereign right.

V. Conclusions and the way forward

The bad boys of Egypt may go for all the insane options concurrently relegating the sane one. The writer of this article is of the opinion that the likelihood of military confrontations is almost zero. But Egypt will use it as brinkmanship to have concessions from Ethiopia.

In case war comes, Ethiopia has the capacity to reverse it. Even if Ethiopia thwarts any probable Egyptian invasion and inflict losses to the invading forces, all the people of the region will be losers. Innocent civilians die, resource is wasted, hatred will take deep root, and regional security will be destabilized and so on. No one benefits from war. Certainly all of us will gravely lose whichever country wins the war. But, there is one thing that remains unchanged. Ethiopia as a source country and Egypt as a lower riparian cannot be changed. Being neighbours and users of Nile water will not be changed. Why the insane loss then, bad boys?

No human being is superior to the other! Sharing the water equitably remains the only sane option.

God bless the children of the Nile!