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Forum for Social Studies (FSS)

Zewde G/Sellassie

**THE BLUE NILE AND ITS BASINS: AN ISSUE OF
INTERNATIONAL CONCERN**

From Poverty to Development: Intergenerational Transfer of Knowledge -
IGTK Consultation Paper Series No. 2

From Poverty to Development: Intergenerational Transfer of Knowledge -
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Series Editor: Shiferaw Bekele

**The Blue Nile and Its Basins: An Issue of
International Concern**

Zewde G/Sellassie



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THE BLUE NILE AND ITS BASINS: AN ISSUE OF INTERNATIONAL CONCERN

Zewde G/Sellassie

Introduction

This paper focuses on the period starting from 1955 (1947 Eth. Cal.) when Egypt, the major beneficiary of the Blue Nile for several thousand years, without consulting the countries of the Upper Basin, excepting Sudan, took a unilateral step to implement the Aswan High Dam project, till the carrying out of the Blue Nile study by the Ethio-American Co-operation in 1964 (1956 Eth. Cal).

Ethiopia has undertaken multi-faceted studies on the Blue Nile Basin ever since it took a decision to put the waters of the Blue Nile to its own benefit on the basis of its fundamental right over the waters of the river. One of these studies is the Ethio-American field study on the Blue Nile Basin carried out between the years 1957-1962 (1949-1954 Eth. Cal.); it issued a detailed report on the study together with six appendices in 1964 (1956 Eth. Cal.). The concern over the Blue Nile has continued since the period covered under this paper.

I shall present the one overall issue under seven sub-titles.

1. Notes on terminology
2. Geographical features
3. Historical background
4. The problem Ethiopia faced at the announcement of the Aswan High Dam project.
5. Talks and agreements made with U.S.A. so that the latter would recognize Ethiopia's right to make use of the waters of the Blue Nile in order that Ethiopia may fulfill its proper desires; so that it will help Ethiopia in its attempt to carry out researches and study on the Blue Nile valley; and so that it will help train its staff needed for the development of its water resources.
6. The establishment of water resources authority in Ethiopia, and the activities of the Ethio-American co-operation in the study on the Blue Nile Basin.
7. Conclusion.

1. Notes on terminology

What we call “Abai” in Ethiopia becomes “Bahr al azrak” (Blue Nile) or “nil el Izrak” (Blue Nile) when it crosses the border into the Sudan. Springing from the Victoria and Equatorial Lakes and rivers, and crossing southern Sudan and Joining Baro-Akobo (Sobat) river the source of which is Ethiopia, it joins at Khartoum with Bahr el Gebel or Bahr el Abiad or nil el Abiad (white sea or white Nile), and then it is called El Bahr (sea) or El nil. This river, flowing towards the north, nearing the Sudan and Egyptian boarder, joins what is known as Tekeze in Ethiopia, Setit in Eritrea, and Atbara higher up in the Sudan. Then it crosses Egypt and flows into the Mediterranean Sea.

As Egypt has no other river, and as it is not that much graced with rainfall ancient Egyptians of the Pharaonic era, used to worship it as “HAPI”, considering the river as the source of life¹. In the Bible too (Genesis, chapter 2, no.13) it is called Felege Gion (the river Gion). Ancient Greeks and Romans used to call it Nilus.

In our own era the words “Tikur Abai” and “Netch Abai” are words we borrowed from others. Since the river emanating from Ethiopia is known as “Abai,” in my lecture or in my paper I identify the Blue Nile as “Abai”, the White Nile as “White Nile” and when the two join each other I call them “Nile”.

2. Geographical features

The Nile is the longest river in the world exceeding the Mississippi Misouri by 100 miles. As measured at Aswan the high flow of the water is 13,500 cubic meters per second. Annually it transports 90 billion cubic meters of water and 140 million tons of soil. It is said that the soil that is carried away by the river raises the level of the habitable land of Egypt by 10 centimeters every hundred years.

The two sources that contribute to the waters of the Nile are the equatorial Lakes area and the Ethiopian highland areas. The waters contributed to the White Nile by the Equatorial Lakes, around Malakal, is 15.5 billion cubic meters annually. The total volume of water reaching Aswan is 84 billion cubic meters annually. Of this amount the share of the Equatorial lakes is only 12 billion cubic meters. On the other hand,

¹ Wallis E.A. Budge, *The Nile* (London, 1892), p.45

the share of the Ethiopian rivers – Abai (the Blue Nile), Atbara and Sobat (Baro-Akobo) – is 72 billion cubic meters annually. This is about 86% of the total volume of water flow.

The reason why the White Nile contributes so little is the fact that the evaporation rate taking place at Sud is very high. The river has created a very marshy land in the south central Sudan. This situation has slowed down the flow of the river and exposed the water to high evaporation due to the intense heat in the surrounding area.

The share of the Blue Nile is 54 billion cubic meters. On the other hand, the share of the Atbara River is 12.5 billion cubic meters while that of Baro-Sobat is 13.5 billion cubic meters. By far the biggest of the three, the Blue Nile, covers an area of 324,430 square kilometers including the Lake Tana and its basin. This area comprises one quarter of the Ethiopian land.

The river Sobat has major tributaries like Akobo, Baro and Pivor situated in western Ethiopia. The annual rainfall in this area is over 2000 mm. Sobat joins the White Nile at the southern part of malakal. On the other hand, the rivers Dinder and Rahad join the Blue Nile in between Sena'ar and Wed medeni.

Atbara, known in Ethiopia as Tekeze or Setit, flows to the highland north of the Blue Nile. Of the total 112,400 square kilometers the Tekeze water source area covers 68,800 square kilometers. This is so when all the tributaries are included.

The soil carried away by the three rivers is estimated to be no less than 1,285 billion tons. The river edge of Egypt which is very rich indeed

in fertile soil relies on the annual flood of the Blue Nile for its annual fertilizer. In addition, the cultivable land that measures 5.5 million acres (135,802.5 square kilometers) gets its water from this flood of the Blue Nile.

When the flow of the Blue Nile is high (up to 10,000 cubic meters per second) a large volume of water flows into the Mediterranean sea. Because of this the water level may grow up to 20 feet, temporarily halting the flow of the White Nile at Omdurman.² The water level of the White Nile, at a specific period, around Omdurman, may reach 20 feet maximum.

It is said that Egypt is “the gift of the Blue Nile.” While this is undeniable, the countries that benefit by the waters and the precious soil carried away by the Blue Nile live under continued fear. This fear emanates from the concern that the flow of the river may one day be greatly diminished or that the course of the river may be diverted, endangering the very existence of Egypt. Those living around the source of the river (Ethiopia and Nubia, the present day Sudan) have made use of this fear at various times in order to put all kinds of pressure on Egypt.

3. The historical background of the Blue Nile issue that goes as far back as the age of the Blue Nile itself

Before Herodotus contributed to the world, the saying, “Egypt is the gift of the Blue Nile” this was well known to the Ethiopians and to the Egyptians themselves. While the soil being carried away by the Blue Nile was turning the desert land into fertile agricultural land, while the Egyptians were fortunate enough to collect rich and extensive harvest, the Ethiopians watched in silence while the river was eroding and washing away the fertile and fatty soil of the northern part of the country making it appear inhabitable, naked hill and valley of the moon, and depriving it of its characteristics as land.

The Egyptians, thanking their various gods for the great gift given to them, have been able to create a great civilization on the edge of the river by utilizing the water and soil coming from the source of the river that the Greeks called “mountains of the moon.” The Ethiopians of the ages gone by who were owners of a few large and fertile agricultural land had no reason to envy the Egyptians for their good fortune. Nonetheless, one

² A.B. Thompson, “The Water Problem of Ethiopia and Neighboring Countries.” International Affairs, (Nov. 1935) p.770.

cannot say that the issue of the Nile has never been raised even at that period.

In ancient times whenever the volume of the water flow of the Blue Nile decreased the situation became a matter of concern as we learn from history. Unsuspecting that the flow of the water decreased due to the occasional drought at the source of the river Egyptian officials, believing that the Ethiopians dammed or diverted the course of the river, used to send envoys to Ethiopian rulers from time to time, so that they may let the river flow as usual.

For example, the Arabian historian Al Makin, writing 200 years after the event relates that during the Fatimid dynasty, under the reign of Sultan Abu Tamlin al Mustanzir, (1036-1094) the flow of the river reaching Egypt decreased around 1089-1090. Because of that the Sultan sent immediately Aba Michael, the patriarch of the Egyptian Church, together with a substantial amount of gift, to Ethiopia to appeal to the Ethiopians to release the waters the flow of which was interrupted.

The journey took place between the years 1092 and 1094. He relates that when the Ethiopian monarch ordered the demolition of a hill the water level increased by 3 feet in a single night. The Ethiopian monarch of the time was Yimirhane Kristos of Zatawewe.

A historian by the name Makrizi, a Moroccan national, recorded at the time that in the 14th c. the Egyptian mamluk Sultan Al Nassir Mohammed Ibn Kalaun demolished a number of churches and persecuted his Christian subjects; this news created great sorrow when it reached Ethiopia. Although his name is not mentioned in the record, the Ethiopian monarch, King Dawit, who reigned from 1380 to 1409, sent a delegation to Egypt warning the Egyptian ruler strongly that he can starve the Egyptians to death by diverting the course of the Blue Nile.

An Egyptian court official by the name of Ibn Fadil Alah Aloumari, had written his observations in his era under the title “Masalik al Absar Fi Mamlik Al Amsar” (directly translated as “survey of the land of the monarchs.” In this book he relates that the Abyssinians (Ethiopians) claim that they control the flow of the Blue Nile, and that they let the waters flow to Egypt only because of the respect they have for the Egyptian Sultan.³

However, when the Egyptians came to realize the true cause why the waters of the Blue Nile decrease sometimes, they dropped their former

³ Gandfroy-Demounby, Iban Fadi Al-umari Masalih al-Absar Fi Mamlik Al-Amsar, (Paris, 1972)

suspicion, and as of then the peoples of the two countries lived in peace until the end of the 18th c.

The situation changed, however, after Napoleon occupied Egypt (1798-1801), and subsequently others ruled over the country-Mohammed Ali Pasha (1805-1849), Said Pasha (1854-1863) Hediv Ismael (1863-1879) and Great Britain (1882-1921).

Mohammed Ali Pasha who was appointed as governor of Egypt by the Turkish sultan, established a strong central government after dislodging the mamluks from power. He initiated development projects extensively by establishing irrigation schemes and by constructing dams. After establishing a modern military force he occupied Sudanese territory stretching to the borders of Ethiopia and Uganda in 1820 (1812 Eth. Cal.) with the intention of controlling the environs of the Blue Nile valley.

Said Pasha, the son and heir of Mohammed ali, permitted the French engineer, Ferdinandde Lecepe to construct the Suez Canal that would link the Red Sea with Europe, India, and the Far East.

Khediv Ismael following his grandfather's goal of putting the entire Blue Nile valley under Egypt's control, 1st obtained the legal permission of the Turkish Sultan in 1865 to occupy Massawa and Swakim. Next to that he managed to encircle Ethiopia by occupying, by force, Somalia and Harar. Following that he waged war on Ethiopia in November and March 1866.

Because of the heavy defeat of the Egyptian army in the campaigns waged against Ethiopia Col. Ahmed Ourabi and the officers who accompanied him started a protest movement at massawa and returned to Egypt; they continued the movement even after their return. This movement of the officers which became a catalyst for the rise of the national movement in Egypt has, in the end, cut short the ruling period of Khedir Ismael and forced him to flee to Italy by a ship known as "Mahrusa". This happened in 1882. This was the time when the British, in order to maintain their interests in which they spent a great deal of money to construct the Suez Canal and other institutions as well as other development plans, taking advantage of the turmoil that ensued, attacked Alexandria with artillery and put Egypt under its control.

The coming and going, or the rise and fall of governments and dynasties is a phenomenon that occurs several times in history. Likewise the Nile issue which is a thousand years old, as long as it concerns the relationship among the people living in its basin, will, no doubt, continue for a long time to come. It is inevitable that as long as the countries and

governments of the Nile basin take decisions or follow policies only from the point of view of their interest, this will result in pressure that will create discord over the Nile River.

As we learn from history a number of Ethiopian rulers made use of the threat of diverting the course of the Blue Nile in order to curb some of Egypt's oppressive activities against Christians.

Likewise when the British were administering the Sudan they had a key instrument in their hands to make or unmake Egypt. For example, when the British representative in Egypt was killed on Nov. 24/1924, in accordance to the warning issued by the British Foreign Office, the Sudanese coalition government under the British told Egypt that as of then the 300,000 Fadan (126,000 hectares) of land being developed by means of irrigation scheme carried out by the Gezira project, will be expanded as necessary to an unlimited extent. When the matter was brought to parliament for discussion strong protest arose-does the British government wants Egypt to surrender by penalizing it with starvation? Was the question asked? The then British minister of foreign affairs replied by saying that that was not the intention; as long as there is a government in Egypt that is willing and loyal to the Anglo-Egyptian co-operation the decision will be abrogated and a convenient condition will be created with the Sudan so that the water flowing to Egypt will not be diminished.

The Egyptian plan known as the Nile valley co-operation issued by Mohammed Ali Pasha, Khediv Ismael, and king Farouk, was activated on a high level by president Gemal Abdel Nasser who overthrew the Mohammed Ali dynasky on the wake of the 1952 revolution. When it was known that this plan which was aimed at putting the Nile basin countries under the influence of Egypt, could not be implemented alone through the support of the parties in these countries, through anti-imperialist propaganda, and through the power of the tank that Egypt could not make a reality, Nasser abandoned this plan and replaced it by the water accumulation construction programme of the century. According to this programme it was planned to construct a dam with a high capacity to accumulate water that would deliver Egypt from drought that recurs every 100 years.

It was at the beginning of the 20th c. that planning started to study the Nile water situation in a systematic way and to expand irrigated farming in Egypt. It is around the 1930s and 40s that studies and planning were carried out in order to put the Nile waters to full use for

irrigation and energy supply. Accordingly, the programme known as the century's accumulation of water was prepared. International agreements have been entered into between Great Britain and Egypt on one hand, and between the governments of the countries of the Upper Nile basin and Egypt, on the other, in the years between 1891 and 1929. These agreements have been entered into in order to ensure the continued flow of the waters of the Nile into the countries of the Lower Basin.

One of these agreements was the Anglo-Ethiopian border agreement of May 15/1902. Article 3 of this agreement stipulates:

His Majesty Emperor Menelik shall not, without the consent of the majestic government of Britain and the government of Sudan, carry out any construction work on the Blue Nile, Lake Tana, and Sobat River, that may obstruct the flow of the river; or will not permit the carrying out of any construction⁴

Egypt and Great Britain signed an agreement, in the name of Sudan, without consulting the countries of the Upper Basin of the Nile, in order to share the waters of the river between them. In accordance to the agreement made on May 7/1929, Great Britain representing Sudan in the name of condominium, allowed Egypt 48 billion cubic meters of water annually. This has been considered as Egypt's historical right. Sudan, on the other hand, was permitted to use only 4 billion cubic meters of water annually.

Egypt developed over 3 million hectares of land that would require over 60 billion cubic meters of water for irrigation annually. Sudan, on its part, developed 2 million hectares of land that would require 16 billion cubic meters of water for irrigation annually. The amount of water utilized to date by the other countries of the Basin is very little indeed; even the effort they made to utilize the water for irrigation is negligible.

As regards Lake Tana, Azazh Workineh Eshete (Dr. Charles Martin) was sent to U.S.A. in response to the Anglo-Italian agreement of 1925. After meeting with President Coolidge he signed an agreement with the New York J.G. White Engineering Corporation on Nov. 3/1927. It was agreed that the White Engineering Corporation would construct a dam at its own cost, gain profit by selling the water to the Sudan, and would pay royalty to the Ethiopian government.

⁴ Sir Edward Herslet, the map of Africa by treaty, Vol. 2 (London 1976) p.585

Apart from fully completing the Lake Tana study between the years 1930 and 1934 the J.G. White Engineering Corporation made two field visits to select the site of the construction. The cost of the construction was estimated at 10-15 million American dollars. The construction of the dam, however, has not materialized. The main reason for this was the British and Italian pressure in the diplomatic field, on one hand, and the Ethio-Italian conflict that started in Dec. 1934 triggered by the Italian invasion of Wolwol, on the other.

As recorded by John Spencer, the Chief advisor to the Ethiopian ministry of Foreign Affairs:

Although it did not gain any results, Egypt had the desire to raise the issue of the Blue Nile since 1945; regarding the waters of its rivers, Ethiopia, to give a positive response to Egypt, would have to get a reciprocal, beneficial, positive response from Egypt; otherwise it had no desire at all to enter into agreement with Egypt. On top of that, in the peace conference held in Paris, the fact that Egypt raised an objection to Ethiopia's claim over Eritrea, did not help to hold such negotiation. That is why Egypt's overture could not be accepted.⁵

4. Steps taken by Ethiopia to withstand the problems that the Aswan High Dam may bring about on Ethiopia

As the planned construction of the Aswan high dam was a very costly affair the World Bank was not ready to bear the total cost of the project; however, if an agreement could be reached on the technical aspect, and if the American and British governments were to give additional support the World Bank was willing to participate in financing the project on its part.

In order not to make Egypt rely on Soviet financial or technical aid the U.S. and British governments had shown their willingness directly to participate in the project. However, their financial and political participation was to be in the long run, and they wanted to know beforehand whether there was a plan or not on the part of Ethiopia, to utilize the waters of the Nile, (5) that would reduce the flow of the water entering the lake which was to be used as a water reservoir. This extremely huge lake, apart from accumulating the water passing across

⁵ John Spencer, Ethiopia at Bay (East Lansing, 1978) p.188

the Sudan border, was to spread out permanently on an extensive land in the Sudan. Because of this Sudan expressed its direct desire from the point of view of territory and with regard to its obtaining additional water for its planned irrigation programmes. It was recorded that the World Bank, in order to cover the presented cost of the dam project had, as a pre-condition, amended, in a satisfactory way, the agreement made between Egypt and the Sudan regarding the sharing of the water.

It is believed that the Egyptian government relied on reaching agreement with Ethiopia with regard to the construction of a high dam at Aswan in order to solve its water problem by means of one big project, including its control of the dams to be constructed on the outlet of Lake Tana or on the lower parts of the Blue Nile. The fact that the Egyptian government, the World Bank, the governments of U.S.A. and Britain did not raise the general question of the high dam issue with Ethiopia supports the foregoing outlook.

If Ethiopia were to be asked not to reduce the volume of water flowing into Egypt, the task force established by the Ethiopian government had presented a proposal recommending that such demand should not be accepted and that negotiations should be held that would, without doubt, delay the construction of the dam. Since the government of Nasser had the obligation to implement this plan, in view of the internal political and economic situations of Egypt, such delay would obviously result in various problems to Egypt. Similarly, if such a situation would be created U.S.A. and Britain would undoubtedly point their finger at Ethiopia for such a delay in the construction of the dam; this was quite obvious.

If the dam were to be constructed after the completion of the financial negotiations with the World Bank, and with the governments of U.S.A and Britain, without getting any assurance from Ethiopia and without officially taking into account Ethiopia's objection to the affair in line with its rights to make proper use of its waters, it would have been assumed that Ethiopia had silently approved of the matter and that it would curb itself from taking any steps to reduce the flow of the Blue Nile. This being a rather risky situation there is no doubt that Egypt and Sudan would have inclined towards this stand. On top of all that, it was believed that U.S.A and Britain would have been forced to support the Egyptian stand in view of the financial contribution they were making for the construction of the dam, and in view of the degree of contribution

they were making in political and economic field in the pressing situation Egypt found itself in, with regard to fulfilling its demand for food.

In short, the question was: ought Ethiopia at the time to have expressed her right to make a proper use of its waters or not?

When the matter is considered first from the legal point of view there was no forceful situation for anyone to take steps to ensure his rights. It is true that if the matter concerns private owners of land, from the point of view of private legal situation, the owner of the land of the upper basin is not bound to express his right or his protest to the owner of the land of the lower basin that is preparing to build a dam. In accordance to the fundamental principle of both international law and private law, regarding utilization of water emanating from a common source, it is necessary to make proper use of water, and to return the used water, in the proper manner, back to the running river. This operation has obtained acceptability, for instance, in the water disputes between Pakistan and Afghanistan, and India.

In such circumstances, since there is no obligation from the legal point of view, to obtain and maintain the right of the upper basin a country may keep on protesting clearly to the lower basin, and will be forced to ratify the same. Therefore, the only remaining question is: is such official protest necessary from the point of view of operational or political reasons?

One may consider how the other party would have reacted if the Ethiopian government has indeed taken steps or expressed protest. As the World Bank has taken steps regarding Sudan, it would have taken similar steps regarding Ethiopia; there is no doubt that pressure would have been put on Ethiopia to influence it, so that it would give a clear assurance to ensure Ethiopia's water need, and to ensure its programme of water usage (irrigation, etc.). Likewise it may be doubtful that the agreement to be reached with Ethiopia to cover the cost of the dam would be put as a pre-requisite by the Bank. Since it held as guarantee that the programme that is so essential to Egypt would not become a reality, the World Bank, to prevent the condemnation it may face from the entire world, would raise the question of being given an assurance that Ethiopia is not ready to make use of its waters, and that it is incapable of doing so. In a similar way, from the point of view of the objective of U.S.A. and Britain any statement emanating from Ethiopia will trigger pressure on Ethiopia from these countries. In other words they would influence Ethiopia to come into agreement with Egypt and the Sudan.

If Ethiopia is to be pressured to go into a trap or to give any kind of clear statement it will face the same situation as did the Sudan. Regarding its need of water it will have to make statements, and will ask Egypt to raise its share of water; in order to negotiate with Egypt it will have to rely on the aid it gets from the World Bank. On the other hand, if it is to give a reply by only stating repeatedly its right to use its own water in a proper manner in line with international law, in response to the questions the World Bank raises, and likewise if a diplomatic pressure is put on her by U.S.A. and Britain, and finally, now, if it is forced to state that there are no plans to reduce the flow of the water and to make use of the water on a high level, this will be an act that would compromise its honour. And most of all, it may afterwards have to confront the stands of U.S.A, Britain and Egypt that are well known and clearly stated. In other words, they will all manipulate the affair by claiming that all the Ethiopian plans of the future should not interfere with the amount of water that flows into the high dam, or something to that effect.

Overall, regarding the well-known diplomatic questions and pressures, when the operational and political pressures that it may face were considered, it was concluded and decided that before it states its rights over the use of the water, it is not necessary to carry out preliminary organization.

* * *

When it was heard that a preliminary agreement has been reached to help the Aswan water dam project with the participation of U.S.A., Britain and the World Bank, an idea was brought forward to the effect that in order to ensure Ethiopia's legal right, the 1st counter action would be to find immediately a reliable company that was capable to construct a dam on Lake Tana or on the mouth of Tis Abai for the supply of hydro-electric power.

I was heading the Ministry of Works and Communication at that time, with the rank of vice minister, and His majesty the Emperor ordered me to control the project which was to be undertaken by a French company known as Batignole, in co-operation with a local Italian company known as Naviga Tana.

From the preliminary study, I came to realize relies that there was a view to the effect that constructing an electric supply station as the mouth

of Lake Tana would have no practical use. A power station to be built at this location would be very far from any visible electric transmission center. Besides, the capacity of the power supply would be very small. Likewise, I proposed that without conducting sufficient preliminary studies, and without putting out competitive bids, it would not be proper to give away such a big project. As a result, we invited the famous hydrologist of the time, professor Helstrom, Swedish national, to give us his advice on the matter. He came on a visit in February 1956, and he confirmed the objection that had been raised by Batignole-Naviga Tana.

According to Helstrom's opinion the location best suited for the hydro-electric construction was a place far away from the lake. Measured from the course of the river, 325 km away from the lake, south from Debre Markos there is a good place for a dam, he indicated; in order to fulfill the daily load difference needed it will be necessary to have a water reservoir on the hydro-electric station.

The water to be utilized at the hydro-electric supply station will emanate partly from Lake Tana, and partly from a river flowing between the lake and the electric supply station. The water collection area found at the outlet of the lake is about 16,800 square kilometers. Likewise, the one at Melka Kalo will be about 78,800 sq.km. Therefore, the water supply area found between the lake and the power supply station is 62,000 sq.km. This means that the line of transmission to Addis Ababa will be only 150km. long.

A water reservoir will be needed in order to have a regular flow of water to the power supply station. As the reservoir will have to be established around Lake Tana this means that this lake will be used for the benefit of the goal of the reservoir. The water needed for this goal will be similar to the water needed for the irrigation scheme. This means that in the dry season Lake Tana will be used as reservoir for irrigation development. Finally, a medium size water reservoir will have to be placed as defense against flood.

Formerly most of the studies carried out on Lake Tana were done during the British administration of Egypt and Sudan. Those were carried out in 1902/03 by C.E. Dupius, staff of the ministry of works of Egypt, and then by G.W.Graham, geologist of Anglo-Egyptian Sudan; likewise a study has been conducted in 1920-24 by R.P. Black, a staff of the physical department of the ministry of works of Egypt.⁶ Likewise a

⁶ William Garstin, Report on the basin of the Upper Nile, (Cairo, 1904); H.E. Hurst, R.P. Black and Y.M.Simaika, the Nile basin vol. VIII (Cairo, 1946).

survey study was done by Major R.E. Cheesman.⁷ Some studies have also been conducted in 1929-1934 by the American company, J.G. White Inc. of New York, which was invited by the Ethiopian government to survey the lake and submit estimates to control the outlet of the lake.⁸ Further, a study has been conducted by L. Ponte Corvo on Lake Tana and the Blue Nile during the occupation of Ethiopia by Italy.⁹

All these studies have ascertained that Lake Tana will be suitable for a multifaceted project in order to realize the following goals.

1. To ward off flooding that used to occur frequently by controlling the lake and by reducing the high level of the water.
2. Securing water reservoir for the hydro-electric supply station, through controlling the Lake; in addition, increasing the water flow to the power supply station during the dry season; because of this water will be available throughout the year at the power supply station.
3. Through controlling the Lake Tana which is one of the most suitable places for water reservoir in the Blue Nile, it will be possible to supply water for irrigation within Ethiopia or outside Ethiopia.

It will be necessary to build a controlling mechanism at the outlet of the lake in order to realize the foregoing goals. Accordingly, certain works will be carried out in order to lower the level of the water. The control mechanism should have iron doors that could be activated as necessary.

Some studies formerly carried out on Lake Tana recommended the digging of an inner deep water canal, 10km. in length, half way to the base of the river, and let out water from the lake.

The water accumulation capacity of the lake to the upper level, i.e. in between the water level of the lake till the highest low place will be 1 meter and a half; this will have a capacity of storing 4 billion cubic meters of water. Others estimated that the Tana Lake has a capacity of storing 11 billion cubic meters of water.

⁷ R.E.Cheesman, *Lake Tana and the Blue Nile* (London, 1936).

⁸ J.G. white, corporation report on Lake Tana outlet works and the Ethiopian Highway from addis Ababa to Lake Tana, 1933-1935.

⁹ L. Pontecorvo, *Engineering problems in colonial territories* (Rome, 1938); idem. *L'Africa Orientale Italiana ed.il Nilo* (Rome, 1939).

In the process of ascertaining Ethiopia's right on the Basin the major issue was to examine properly the blue Nile Basin, and decide on the amount of water needed for irrigation. In line with this the Batignole-Naviga Tana water plan became unacceptable. Instead of working on a limited project it was found necessary to concentrate on the start of hydrology studies and carry out the study of the Blue Nile water basin.

5. The Discussion in Washington

I had to go to U.S.A. in the spring of 1956 (1948 Eth. cal.) to negotiate with the world Bank on the 2nd Highway Authority loan and to secure loan from the U.S. Export - Import Bank for the purchase of planes for the Ethiopian Airlines and for the construction of Airports. Mr. Robert Scott traveled with me; formerly, four years earlier in 1943 (Eth. ed.) he and I worked closely together during the negotiation with Italy on war reparations in Rome. During our stay in Washington I took advantage of the situation to discuss with the American Ministry of Foreign Affairs about the question of the Blue Nile.

In a meeting with Harbert C. Hoover junior, deputy secretary of state for foreign affairs and chairman of the board of operations co-ordination, I explained Ethiopia's legal right to use the waters of the Blue Nile; I pointed out that although U.S.A. may help the countries of the lower basin, Egypt and Sudan, in fulfilling their needs it would be proper if U.S.A. recognizes openly the rights of the countries of the Upper Basin to justly make use of their share of the waters.

Mr. Hoover, after listening to me attentively, suggested that I should talk in detail about this matter with Mr. George V. Alan, assistant secretary of state for the New Eastern, South Asian, and African affairs, and with Mr. Leo G.Syr, director of African affairs in the American Foreign Office.

Subsequently my legal advisor Mr. Robert Scott and myself met Mr. Alen and Mr. Syr several times during the following two weeks. At the end of our talk Mr. Hoover told me that in one of the press conferences that President Eisonhour would hold, he will explain that the United States government, while aiding the Aswan High Dam Project, will recognize the right of the Sudan, Ethiopia, Ugunda, and other countries of the Upper Basin that contribute water, to use the water of the river. Four days later this promise has been fulfilled. Finally I asked the American recognition to be given to me in writing. Mr. Hoover accepted

my proposal in good grace. He gave me the letter of recognition written on May 26/1956, addressed to the then Ethiopian minister of Foreign Affairs, Ato Aklilu Habte Wold.¹⁰

On my return to Ethiopia I explained to His majesty and to the cabinet the results obtained in the unofficial talk I held with the American Department of State. In line with this I proposed that a Water Resources Development Authority be established under the Ministry of Works which proposal was accepted by his majesty and the cabinet.

Realizing that, first of all, it was necessary to collect the studies carried out on the Blue Nile formerly, I secured permission to engage Piere Petrides for this purpose. Mr. Petrides was an Ethiopian citizen, a Greek national, who had served in the Ethiopian legation in Ankara before the Italian invasion of Ethiopia, who lived in Egypt for a number of years, and who was attaché in the Ethiopian legation in Cairo. Petrides had quite an extensive knowledge on the Blue Nile affair. He established a library concerning water resources; he also prepared a publication recording the studies made previously on the Blue Nile issue. A few engineers and employees have been also employed for the water resources department.

We have been informed that we could ask the American government to aid in the study of the Blue Nile basin in accordance to the proposal made by Mr. Tom A. Clark who carried out the 1st aerial survey in 1952, in accordance with the appeal made by Ethiopia regarding the chance that the Blue Nile waters had for development; the official proposal was made through the regular line of communication of the Ethiopian ministry of foreign affairs to the American government. The American government accepted the proposal immediately. In line with this I signed an agreement on behalf of Ethiopia with USID director.

During my trip to U.S.A in the following year I visited the Head Quarters of the Reclamation Bureau of U.S.A., and the American Border and Geodetic Offices. These offices had carried out a survey study and research on the Blue Nile basin; we agreed that these offices would prepare us information that would be useful for future policy decisions. The American government cancelled its promise to give financial aid for the construction of the dam following the anti-communist pressures created by Egypt's recognition of popular China in 1956 (Hamle 1948 Eth. cal.) and its signing of agreement to buy arms from Czechoslovakia

¹⁰ U.S. Department of State, Foreign Relations of the United States, 1955-1957, vol. XIII – Africa – National Security Council Report 5615/1 (Washington, Nov. 19, 1956) pp. 335-339.

in September 1955, as well as due to the negative pressure put by senators representing cotton growing states and the party supporting Israel.

At the time the American government dissociated itself from participation in the High Aswan Dam Project, in 1956 (Hamle, 1948 Eth. Cal) it gave the following official explanation:

The American government, in response to Egypt's appeal had entered into co-operation with the British government and the World Bank, in December 1955, to aid the construction of the high Nile Dam at Aswan. This project is a huge one. The cost of the construction was estimated to be 1,3000,000,000 American dollars; of this 900,000,000 dollars was to be expended in local currency. The issue concerns not only Egypt's rights and benefits but also Sudan, Ethiopia, Uganda, and other countries contributing water.

The appeal for aid presented in December was an appeal for help in the form of aid from U.S.A and Britain to Egypt to carry out the work of the first phase of the dam. The result of the work was confined to Egypt alone. In order to implement the overall project the claim of rights over the Nile waters had to get a decision in a satisfactory manner. The other major issue was the feasibility of the project. Therefore, the American aid can be forwarded only if Egypt is willing and capable to deploy its economic resources in this huge construction project.

The conditions that occurred during the last seven months were not conducive to make the project fruitful. There has not been an agreement among the countries of the Basin. In addition, Egypt's capability to deploy its resources on the project to ensure the success of the project has become more questionable than at the period it appealed for aid. Therefore, the American government has concluded that its participation in the project is not feasible.

This decision reflects that the friendly relation the American government has to the people and government of Egypt has not changed in any manner; it shows that nothing has changed.

The American government has a deep-rooted desire for ensuring the social well-being of the Egyptian people and for the development of the Nile River. We are ready to consider the matter in the proper time, as to what kind of steps should be taken in order that the water

resources of the Blue Nile may be put to the benefit and use of the people in the region in a more fruitful way in accordance to the appeal of the countries in the Basin. In addition, the U.S government is ready to aid Egypt in its efforts to improve the living economic condition of its people. In line with this it is ready to hold talks through the proper institutions on the money permitted by the American congress.¹¹

So concludes the statement. Two weeks later President Gamal Abdel Nasser took a counter measure by putting the Suez Canal under the control of Egypt. This measure was to affect the major interests of Britain and France.

The relation between Ethiopia and Egypt was still under tension. In 1959 (Nov. 1952 Eth. Cal.) the Egyptians who were preparing to construct the Aswan Dam, signed a new agreement with Sudan regarding the waters of the Nile. They did so without consulting Ethiopia. In addition, they did not take into account the statement made by Emperor Haile Sellassie in 1957 (Meskerem 1950 Eth. Cal.) to the effect that it is a grave mistake not to give proper weight to Ethiopia's interest.

The agreement made with the Sudan in 1929 has been revised through a new negotiation. The new agreement entered into by Egypt and Sudan in 1959 permits Egypt to construct the High Aswan Dam. This dam is capable of storing 164 billion cubic meters of water. The water flowing in the place in the long run is double on average. Therefore, the 22 billion cubic meters of water emanating from the big dam is extra. 7.5 billion cubic meters was added to the original 48 billion cubic meters. This brings up the overall share of Egypt to 55.5 billion cubic meters. Sudan's share has been raised by /4.5 billion cubic meters from the original 4 billion, bringing its total share to 18.5 billion cubic meters.

Ethiopia raised protest against the joint agreement between Egypt and Sudan regarding the sharing of the waters of the Nile; it proposed that, as the Nile is an international river, it should be developed extensively through the joint authority of the Nile valley. It expressed its view that all the countries of the Basin should participate in the development activities. Leo Silberman, an intellectual from Oxford, stated the following in his writing entitled, "Ethiopia: Power of moderation":

¹¹ United states, "Aswan High Dam", Middle Eastern Affairs (August-September 1956) pp 298-299

Ethiopia has carried out its duty as the spokesman of the left out African countries of the Basin. It proposed instead something like the Tennessee Vally Authority (T.V.A.) covering the whole length of the Nile”.¹²

The British government on its part announced on behalf of its colonies – Uganda, Kenya and Tanzania- that it reserves its right to negotiated agreement to have a proper share in the utilisation of the waters.¹³

In a book written by Ambassador Samir Ahmed (Dr) and published by the Ministry of foreign Affairs of Egypt, in 1978, under the title, “Egypt and the Nile,” condemning the Harmond doctrine¹⁴ of 1895 which supports the unalienable sovereignty of a country over a river that crosses its territory, he expresses the following, demanding that the rivers should flow uninterrupted:

When Egypt decided to construct the Aswan High Dam it consulted the co-operators of the Nile Basin, fulfilling the existing obligations. It has indeed done this in accordance to a spirit of good neighbourliness and in accordance to a friendly and co-operative relation it had with these countries for a long time.¹⁵

Although it paid lip service to this high principle the true fact is that Egypt consulted only Sudan. Accordingly, it saw to it that the new water agreement of 1959 be revised once again. Before it set out to construct the Aswan High Dam with aid and loan it obtained from the Soviet Union it simply ignored all the countries of the Basin including Ethiopia that contributes not less than 85% of the waters of the Nile.

The Aswan Dam which measures 3,6000 m long, 110 m. high, 980 m. base, and 40 m. wide, produces 2,100,000 KW power. Likewise it has been possible to build an artificial lake covering an area of 5,000 sq. km., a dam that is a product of the greatest engineering feat in the world.

¹² Le Silberman, “Ethiopia: Power of Moderation,” the middle East Journal, Vol 14 No 2 (1960), p. 141

¹³ B.K. Batsone, “The utilisation of the Nile waters”, International and comparative Law Quarterly, Vol. 8 (July 1959) p. 558.

¹⁴ U.S. Attorney General Harmond’s doctrine stems from the principle of absolute territorial sovereignty which he invoked in 1895 in connection with U.S. – Mexico dispute over the Rio grand river.

¹⁵ Egyptian White Book, Egypt and the Nile (Cairo, 1978) p. 30

Egyptian officials conducted propaganda and issued political programmes with the aim of triggering insurrection against the ruling dynasty both in Ethiopia and Eritrea. These threat from outside further worsened the fundamental weaknesses of the Ethiopian government. The government came to face stiff opposition in Eritrea and in other places. Due to this the national security council of U.S.A. issued the following proposal:

Regarding the future destiny of Ethiopians as well as regarding the occurrences in their environs the U.S. political programme should try to moderate their fear and despondency. It will do so by means of joint consultations on:

- conditions occurring in the Near East and Africa
- international development of the Nile and
- the Somali issue

Among the steps that were planned to be taken by the national security council of U.S.A. in November 19/1956 more or less included the following:

“Supporting the participation of Ethiopia in any development activity on the Nile Valley, and preparing conditions for the study of the sector of the Blue Nile found within Ethiopia”.¹⁶ The following year when vice president Richard Nixon visited Ethiopia, while the Emperor was having talks with the vice president on March 12/1957, he raised the question of the Nile issue; he expressed his discontent in that U.S.A. did not consult him before it entered into a preliminary agreement with Egypt, to give it aid for the construction of the Aswan High Dam. Likewise, Ethiopia that is contributing 85% of the waters of the Nile, should first of all be able to make use of the required water in order to fulfill its growing needs in the field of agriculture and industry. In order to fulfill these needs and to construct water power stations and barrages it needs financial aid, he explained to him.

Mr. Nixon, on his part, in response to the Emperor’s comments expressed his own views regarding the development of the Nile in the following words: “The Nile issue should get a solution through the co-

¹⁶ U.S. Department of State, Foreign Relations of the United States 1955-1957, Vol XIII – Africa Vol. XIII National Security Report, NSC 561 5/1 Nov. 18, 1956 (Washington, 1959), pp. 335-339.

operation of the Nile Basin countries, namely Egypt, Sudan, Ethiopia, and Britain on behalf of Uganda.”¹⁷

The national Security Council of U.S.A., in a draft U.S. foreign policy statement issued on December 30, 1960 (N.S.C. 6028) stated the following, regarding the Horn of Africa.

Regarding the utilisation of the Nile waters, as long as an agreement has not been reached, any movement that may give to other parties the right of usage, if implemented without taking into account Ethiopia’s interests, will be a great obstacle to Ethiopia’s future plan of utilisation of the waters; this may have great bearing not only on the country’s relations with Egypt and Sudan but also on any country that may participate in giving financial aid or otherwise in similar projects. The Ethiopian government relies strongly on the official assurance it was given by U.S. government in 1956. No step should be taken without getting permission from Ethiopia, without taking into account Ethiopia’s legal right.

The national security report added the following by way of reference:

This assurance is indicated in the letter written on May 26, 1956 by Mr. Hoover Ginier, U.S. deputy secretary of state, addressed to Ato Akililu Habte Wold, Ethiopian minister of foreign affairs.¹⁸ (The reference is taken from the source document.)

The National Security Council in its report issued on December 30, 1960, as a policy direction, states the following:

This directive states that “in as much as possible, in negotiations between Ethiopia and other countries of the Basin, regarding the Nile affair, there should not be American participation; most of all, a situation should not be created that shows that America shares the stand of any country of the Basin.”¹⁹

In 1961 when Syria seceded from Egypt Nasser faced his first defeat around all Arab front.

¹⁷ Ibid

¹⁸ U.S. Department of State, Foreign Relations of the United States 1958-1960. Africa Vol. XIV, National Security Council Report NSC 5028, Dec. 30, 1960 (Washington D.C. 1992) p. 203.

¹⁹ Ibid p. 210

In September 1962 Nasser's force entered Yemen. The major aim of this was to conduct the war against the royal forces of Yemen supported by the Saudis, a war that lasted for five years. Emperor Haile Sellassie was very much afraid of the consequences that may ensue following Nasser's victory. This is because the consequences of the war would influence greatly the Somalis and the "Jebha" Eritrean muslims, as Somalia that became independent in July 1960 had raised a claim over Ogaden. This situation combined with the fact that Nasser's force entered Yemen pushed Emperor Haile Sellassie to put an end to the Eritrean federation and integrate Eritrea with Ethiopia in November 1962.

As expressed by Professor Haggai Erlich, "In 1963 (Ginbot 1955 Eth. Cal.) when OAU was inaugurated in A.A. the relation that existed between Egypt and Ethiopia was greatly improved. In the following year, 1964, Nasser hosted the conference of the OAU summit in Cairo. It was decided in that conference that the maintenance of territorial integrity and sovereignty of each country should be a major principle of OAU. From then on Nasser stopped giving aid to the Eritrean Liberation Front, "Jebha." Because of this the Front was forced to transfer its Middle East Office from Cairo to Damascus, Syria."²⁰

6. The Ethio-American Co-operation programme for the study of the Blue Nile Basin

Apart from studying in detail the Blue Nile Basin, and recording, expressing, listing and mapping done, based on this study, hydrologic and meteorological stations have been established in the entire Basin. A study has been carried out to identify feasible projects, to estimate their costs, and to establish priority for their implementation period. Aerial photos of the Basin have been taken. Likewise, first level geodetic studies have been carried out. The main objective of this was to obtain horizontal and vertical controls. The purpose of these was to enable the preparation of correct maps with different scales.

Engineers and technicians, who would manage the water resources department established to implement the projects, have been trained. These engineers and technicians were trained with the aim that they would also carry out studies and examine the resources of the basins of

²⁰ Haggi Erlich, *Ethiopia and the Middle East* (Boulder Colorado, 1994) p. 138

other rivers. In general this has served as pathfinder for obtaining experts in hydraulic works necessary for water control, and deploying this for power supply, irrigation development, supply of water, and to be helpful in fighting famine and food shortages.

The Blue Nile study is a multi-faceted programme in general; it was initiated primarily in order to realize the following objectives:

1. To train Ethiopian experts with regard to studying, evaluating and planning of hydroelectric and irrigation developments.
2. To help the Ethiopian government in its efforts to create and establish engineering and administrative organisation with regard to the administration of water resources development programme.
3. To identify in detail the feasible developments in the Blue Nile basin, and to chart out a general plan in order to develop resources in general,
4. To establish hydrologic stations in order to obtain necessary information for Ethiopia useful for discussions regarding the international benefits of the Nile

It was through three American organisations that the study programme of the Blue Nile basin was implemented with the participation of Ethiopian engineers and technicians. The total cost of the study was close to 10 million American dollars. The money was raised

on equal basis by the two countries. This cost does not include the salary and per diem paid by each country to its employees.

The organizations that participated in the study programme were: The Army Map Service of the U.S Army Corp of Engineers, the U.S. Coast and Geodetic survey of the Department of commerce, and the U.S. Bureau of Reclamation. Each Organisation, in accordance to a contractual agreement made with the International Co-operation Administration of the State Department, was responsible of submitting a final report on the administration of the team it employed as well as the cost and works implemented. The Army Map Service of the U.S. army prepares the local and foreign maps to be used by the American Army corps engineers. The engineering team has an international recognition in hydraulic engineering related to flood control. The various communication photos of the Blue Nile basin have been prepared by the Mark Hard Aerial Surveys found in Gueleta California, in 1958. The Army Map survey prepared the aerial photographs having 50,000 and 20,000 scales only.

After the Army Map Service completed its work regarding the preparation of photo mosaic, planimetric and other minor maps it transferred the photogrammetric instrument and the employees it had trained to the water resources development.

In the special service agreement of March 5, 1957 the American Ministry of Commerce, in relation to the Co-operation programme between Ethiopian and American governments, had agreed to give geodesy technical aid to the international Co-operation administration. The American coastal and geodetic survey started their work at the end of 1957 and completed it in 1961.

The field team, making use of aerial photographs, conducted geodetic studies in Ethiopia in order to prepare horizontal and vertical numerals needed to make maps by means of photogrammetry.

It has been possible to make horizontal controls, covering the entire Blue Nile basin, by setting up triangulation lines at a distance of not farther than 30km. each. The major objective of this was to connect the tops of all mountains and hills, as well as to know the correct length of the lines by means of making use of geodetic survey and by making calculations. This method, unlike standard study, takes into account the curvature of the land.

On the other hand, the vertical controls have enabled to determine the correct height of triangulation stations found above sea level and the

height of other benchmark structures. In line with this, these heights enable one to determine the contours heights of maps prepared by means of photogrammetry. The two triangular lines and the benchmark heights, apart from securing controls for the preparation of maps of the Blue Nile basin, can be utilized to expand geodetic survey to other parts of the country and as references for the smaller maps to be prepared on land.

In accordance to the special service agreement made on August 9, 1957 between the International co-operation Administration (ICA) and USAID, the reclamation bureau of the American Ministry of Interior started the study on the natural resources of the Blue Nile basin in 1958. In accordance to this, the collection of data and the field studies have been completed by June 30, 1963.

The Reclamation Bureau, under the title “The Blue Nile land and water resources in Ethiopia”, submitted a study report of 314 pages on August 7, 1964. The report has one main volume and 6 appendices.

The appendices are prepared under the following headings:

1. Plan and estimation in two volumes
2. Geology
3. Hydrology
4. Classification of land
5. Power
6. Agriculture and economics.

The report details out the projects that would make contribution to the country’s economy at present and that would enable to develop 433,754 hectares of land by means of irrigation. It also indicates power projects that would generate 8,600,000 KU of electricity. The study details out the land and water resources available to the country. In addition, the study has charted out a general development plan that would strengthen the country’s economy and improve the living conditions of its people.

The Ethiopian government has expended, till 1969, over 20 million birr (nearly 10 million American dollars) on the study of the Blue Nile Basin.

The Basin or the area on which the Blue Nile flows covers 200,000 sq. km, or 1/6th of the country’s surface. In this basin there are various types of resources that will be utilized in the future by means of the water or without it. The resources include the main tributaries as well as their

sub-tributaries. The main tributaries are Didessa, Dabous, Beles, Fincha, Gouder, Mouger, Beshilo, Gilgel Abai and others; the lands around these rivers can be cultivated by means of irrigation.

As these lands require very little amount of water for irrigation the countries of the lower basin need not be worried because this is not going to affect their interests in any appreciable degree. Apart from water and land resources there are also forest resources. Likewise, there are natural animal resources. These can be helpful for the growth of tourism and for setting up big manufacturing based on forestry. Deforestation in Ethiopia results in rain shortage; the damage done would affect not only Ethiopia but also the countries of the lower basin; that is why Egypt and the Sudan in particular should co-operate in the development of forestry in Ethiopia.

After the completion of the Blue Nile Basin study and after the specification of the resources of the Basin, 33 huge projects were identified for preliminary study. Of these, the Fincha hydro-electric power supply project has been implemented and put into use.

One of the huge projects identified was the Tana-Beles project. This included the drawing of the waters of Tana Lake into the Beles River by digging 7 km long canals and the construction of a medium sized dam the height of which will not be more than 2 meters, at the mouth of the Blue Nile. The major objective of this was to accumulate water and to control the flood flowing into the lake. In addition to that, it was meant to make use of the summit or head of the various power supplies to be constructed at different levels, found at a 600 meters distance between the lake's land surface and the Beles river, as well to carry out irrigation development on land measuring up to 600,000 hectares in the lower Beles.

The Tana Beles project was one of the three projects identified by the famous Italian hydrolic engineer, Pontecorvo, during the Italian occupation of Ethiopia, who studied the country's potential hydro-electric resources. The other two canal projects were the Tana Dinder and Tana Rehad projects. These two were dropped at the time the study was carried out, and it was Tana Beles that was selected instead. This was because regarding the length of the canal it was shorter, and in the dry area it had suitable area for irrigation.

The hydrological surveys and studies carried out in Ethiopia from 1957 to 1962 by the American Reclamation Bureau and Coast and Geodetic Departments were limited to the study of the Blue Nile basin alone. That is why the studies did not include Sobat (Akobo-Baro) and the Tekeze rivers that contribute to the flow of the Nile.

The cost estimate for the implementation of the 33 major projects that would develop irrigation and hydro power was also considered in the study of the Blue Nile. Although the cost estimate at present is out of date the place identified as suitable for the construction of water dam and water reservoir as well as the places for accumulation of water and for the development of irrigation are still workable.

The total area identified as suitable for irrigation agriculture in the Blue Nile Basin was 433,745 hectares of land; to develop this land 6.3 billion cubic meters of water would be required. Of the places identified for the construction of water reservoirs about 20 dams could hold over 100 billion cubic meters of water. The four major places identified for the construction of major dams on the Blue Nile River are: Karadobi, Mobil, Mendiya, and Yewesen project. The four dams could hold in total 51 billion cubic meters of water; these could produce 25 billion KWH electric power.

The Ethio-American joint programme to examine and study the Blue Nile Basin from 1957 to 1962 was geared towards determining how much irrigation water Ethiopia would require from the Blue Nile Basin in order to develop its resources. The programme created awareness about the destructive nature of water and the need to control this. The study reveals how to control the water in different ways, how to spare the land from soil spoilage and erosion, and the multi-faceted advantages that may be gained from a project, such as supply of electricity, irrigation scheme, navigation, recreation, fish breeding, water accumulation and the like.

7. Conclusion

The total population of the 10 Nile Basin countries, namely Burundi, Egypt, Eritrea, Ethiopia, Kenya, Ruwanda, Sudan, Tanzania, Uganda, and Congo Democratic Republic (Zair) was estimated to be 350,000,000 by the year 2004. According to the study of the World Bank the population of this area was estimated to reach 1,000,000,000 by the year 2050.

In accordance to the agreement made by the Sudan and Egypt in 1959 Egypt's share of the waters of the Nile was to be 55.5 billion cubic meters while that of the Sudan was to be 18.5 billion cubic meters.

At present Ethiopia utilizes only 0.6 billion cubic meters of water from the Blue Nile. The rest of the Nile Basin Countries (Burundi, Eritrea, Kenya, Ruwanda, Tanzania, Uganda, and Congo Democratic

Republic (Zair) utilise in total only 0.5 billion cubic meters of water from the Blue Nile.

After the completion of the Yejengole canal project which Egypt and Sudan dig jointly in a marshy area known as Soud in southern Sudan, each of them will get a few billion cubic meters of water. Egypt has started to implement its policy plan of expansion of horizontal farming in order to satisfy the needs of its ever growing population. It does so in accordance to the agreement it made with Sudan in 1959, relying on the water that it considers as its right.

Apart from the Aswan High Dam, two other dams have been constructed in Sudan. These are the Rosierse dam on the Blue Nile river with a capacity of holding 3 million cubic meters of water, and the Kassem Elgirba on Atbara River with a capacity of holding 1.3 billion cubic meters of water. Because of the salty nature of the flood flowing from Ethiopia every year the holding capacity of the 1st one has been reduced to a substantial degree. Together with the two dams constructed earlier Sudan has at present 4 dams. These hold altogether 6.1 billion cubic meters of water. Sudan has an agricultural programme to develop 1.9 million hectares of land by means of irrigation. It has also constructed a hydro-electric power station on the tributaries of the Blue Nile which enables it to produce altogether 278 million watt annually. The construction of the Jongele canal was started in 1974 to withstand the water wastage around Soud in the Sudan. However, the construction of the canal has been interrupted, due to the conflict that arose in the area, in 1981. Unless water reservoirs are constructed around the equatorial lakes the transition canals cannot be fully effective.

Until recent times Egypt has developed about 7 million Fedan or 3 million hectares of land by means of irrigation. Thus, it utilizes annually for irrigation 65 billion cubic meters of water including the reutilization of the water coming out of the dam. The Aswah High Dam has a capacity of producing 645 million Watt hydro-electric power. However, the water wasted by evaporation and flow is very high around the lower desert region.

In addition, Egypt has decided to develop by means of irrigation, according to a plan they called "Toshka" on January 19/1997 (Tir, 1989) Kharga, Dakhla, and Fara fra, desert areas found in south eastern part, as well as an extensive desert land in north western part towards Sinai, through a canal called peace, across the Red Sea, passing under the Suez Canal. In order to implement these plans in 20 years and to secure about

1 million hectares of additional land it will require not less than 2 billion dollars, as is well shown. It appears also that it has a long term plan to resettle 16.2 million people by expending up to 640 billion birr. It is estimated that Egypt will need 8 billion cubic meters of additional water apart from the 55.5 billion cubic meters of water that it claims to be its annual share in accordance to the agreement it made with Sudan in 1959.

However, neither when it made an agreement with Sudan in 1959, nor when it was issuing the new plans did it consult or make an agreement with the other eight countries of the Nile basin; it is clear that it is a matter of concern that a strong misunderstanding may ensue as a result.

The water utilized by the countries of the Upper Nile basin is very small. In the equatorial lake basin or in Ethiopia no movement is seen to construct irrigation scheme. It has been possible to construct the Owen Falls dam which has a capacity to produce 150 million Watts hydro power due to the agreement Uganda made with Egypt. This dam supplies an uninterrupted flow of irrigation water to Egypt, and has enabled Uganda a supply of electric power. In Ethiopia the Fincha dam has been constructed on a tributary of the Blue Nile River. The major aim of the construction is to supply electricity and to control the water that is flowing from the marshy area to the sugar cane field. The water reservoir has a capacity of holding 6 million cubic meters of water, and of supplying 110 M.W. hydro power.

Ethiopia which supplies 86% of the Blue Nile waters to the Aswan dam should utilize the waters of the Blue Nile for the fulfillment of its development needs, to feed its fast growing population, and to withstand the drought that it has been experiencing during the last 5 decades.

Recently, in a study carried out by the Ethiopian Valleys Development Authority, a water budget has been estimated for the period up to 2040. This has taken into consideration estimates of population growth, the amount of animal resources available, and the water needs for homes, cities, commercial and industrial sectors. In addition it takes into consideration the water resources available from the three valleys – the Blue Nile, Tekeze (Setit) and Sobat (Baro Akobo) basins. According to this study 57.8 billion cubic meters of water will be available annually from these basins; it is also estimated that the amount of water needed for the development of 1.2 million hectares of land found in the valleys, by means of irrigation, is 19 billion cubic meters of water. Half of this is planned to be assigned to the Baro-Akobo basin. This is because there is

a high wastage of water in the form of evaporation and flow. the estimated amount of water to be obtained from the Blue Nile basin is 53.3 billion cubic meters and the amount of water needed to develop 0.84 million hectares of land by means of irrigation, is 8.4 billion cubic meters or only 15% of the water available in the basin.

The potential electric power supply from the Blue Nile basin, Sobat (Baro-Akobo) and Tekeze (Setit) is very high. In the Blue Nile basin alone places that can be used for the supply of electricity have been identified on the 9 tributaries of the river. The potential electric power supply from these places will be up to 48,970 G.W.H. annually. In the Baro Akobo basin three dam sites have been identified. The electric power supply from these dams will be 11, 240 G.W.H. annually. The potential electric power supply from the basin of Tekeze, Angereb, and Goang rivers will be 5910 G.W.H. annually. The total supply will be 66,120 G.W.H. The estimates are based on Ethiopia's future needs of electric power.

Various experts of international standing testified that if dams, water reservoirs, and electric Power supplies from water are constructed in Ethiopia, this will have great benefit to the countries of the Nile basin as a whole, and in particular to Egypt, Sudan, and Ethiopia.²¹

The implementation of the projects of the Blue Nile basin, like all other similar projects on the basins of other rivers, will, no doubt, have various economic benefits. There should not be any unnecessary tension between Ethiopia and the peoples of the neighbouring countries with whom it lived as their neighbour for a thousand years. Most of the projects being huge ones cannot be implemented in the short term. Even if the necessary capital were available in order to implement the projects the countries of the lower basin should have nothing to worry about. The decrease in the volume of the flow of the waters of the Blue Nile would be negligible.

The burning issue at present and the matter of great concern is the soil erosion which goes on unabated; agricultural fields are being demolished as a result; likewise, because of the natural occurrences on the Blue Nile, Tekeze, and their tributaries, the major part of the country is being deforested on a high degree.

The following areas, onto which the Blue Nile and Tekeze flow, have similar geographical features:- Tigrai, Wag, Lasta, the central part

²¹ Yacob Arsano, "Egypt has prepared a 40 billion birr project to develop the Sahara desert on the waters of the Blue Nile, Reporter [Amharic] vol. 10, no. 29/500 (Yekatit 1/1997 Eth. cal.)

of the Amhara region (Belessa, Gaint, Wadba, Delanta, Dawent, Yeju, Werehimenu, Ambassel, Wereilu, Scient, Borena, Gojam in part), northern Shoa area (Menz, Tegulet, Merabete, Moret, Bulga), etc. They are characterized by rugged hills, deep river valleys, deforested and eroded highlands, and places denuded of any kind of vegetation. These are indicators that desertification is expanding in the otherwise fertile Ethiopia as time passes. While people are falling victims to drought and famine because of uninterrupted expansion of desertification, big rivers like Beshilo, Wonchit, Jamma, and others found nearby, a few kilometers away, are seen destroying anything that remains of what was on the highlands.

Because of this, as rainfall vanishes due to deforestation, the volume of water flowing to Egypt and Sudan from Ethiopia is bound to decrease; there is no doubt about it. Therefore, most of the people living in very hilly countries should be resettled on flat areas in order to improve their living conditions; the land in these regions should be left idle so that it will be re-afforested; likewise, electric power supply from water should be constructed in Ethiopia. All these are beneficial not only to Ethiopia but also to Egypt and Sudan as I have already mentioned it earlier and joint responsibility should be taken in this regard.

The Nile basin countries have made some effort, during the last 30 years, to create co-operation amongst them, and working methods for co-ordinated and joint development that would include all the basins. One of the programmes drafted recently was known as "Nile 2002" that was aimed at creating more awareness and co-operation among experts and government employees concerned with the waters and development of the Nile.

All the countries of the Nile basin should, therefore, participate fully in the utilization and development of the water which is their common resource, in order to withstand the problems that exist at present and that may arise in the future, as well as to correct past mistakes. It is also time now to take strong measures.

In the past the countries of the upper basin were ignored. This situation should not be allowed to continue. Ethiopia in particular had been victimized repeatedly by shortage of rainfall and recurrent drought during the last 50 years. Deforestation, soil erosion, the drying up of springs and rivulets found in the Blue Nile basin, and in general environmental depredation and destruction have been expanding at an alarming rate in areas that are the source of the waters of the Blue Nile.

They are expanding at even faster rate. On the other hand, in the countries of the lower basin, high evaporation and flow, environmental deprecation, water wastage and inefficiency in utilizing the water have become matters of concern.

In order to meet the ever growing rate of demand of the people for water, as well as the existence of a great chance to build water reservoirs and hydro power institutions on the Blue Nile, Atbara and Baro Akobo (Sobat) rivers, it is necessary to focus on implementing such projects in the highland areas where water shortage caused by evaporation is small, rather than in the desert areas. A proposal has been made to curb the flow of the Blue Nile around the Tana Lake in Ethiopia. This will enable to curb the wastage of 15 billion cubic meters of water per year. If this is realized the annual flow of the Blue Nile will be 5%. In addition it will reduce the wastage of water through evaporation and flow, in the Nasser Lake created as a result of the Aswan High Dam in the Lower Basin. It is unlikely that taking such steps will be acceptable to Egypt and Sudan, since they are not willing to lose their unilateral control over the flow of the Blue Nile.

Such steps should be taken in the Equatorial lakes area and in the Ethiopian highland areas in order to withstand the pollution and destruction of natural resources taking place in the source of the Nile. Such steps can be taken in co-operation with the international community and international organizations.

Ever since the Nile issue cast shadow over the relations between Egypt and Ethiopia, as of 1950, the diplomatic delegations or representatives of the two countries, when meeting in international conferences, although the Blue Nile issue could always be in their minds or come under their eyes at any time, have never wished to raise it even once. In particular on the part of Egypt, the word Nile was unmentionable. This situation had continued for 50 years until the leaders of the two countries, the Egyptian president Mubarek and his Ethiopian counterpart Meles Zenawi met in Cairo on July 1/1993 and signed an agreement that opened the way for the two countries to co-operate in all matters of joint benefit including the Blue Nile issue.

The statement in article 5 of the agreement that ran as “each party shall refrain from engaging in any activity related to the Nile waters that may cause appreciable harm to the interest of any party” may be interpreted to mean that Ethiopia shall refrain from utilizing the Blue Nile waters in order not to cause great harm to Egypt, thus making the

statement rather ambiguous. It is well known that, in principle, improperly diverting the natural course of a river deliberately meant to cause great harm to another is forbidden in international law. However, neither the agreement nor the law forbids Ethiopia to make proper use of its rivers-the Blue Nile, Tekeze and Baro Akobo – in order to meet the needs of its people.

Because of the confrontation between the two countries no talks had been undertaken about the Blue Nile issue that had linked together the two sisterly countries; the long silence in which no talks had been undertaken has finally come to an end because of the meeting of the two leaders. The fact that a new spirit of friendship emerged in which both parties could hold open discussions and make decisions regarding the Blue Nile issue for the benefit of both countries is a step in the right direction. The fact that the Blue Nile 2002 conference had started in 1993 in Aswan (Egypt) with the support of the political leaders of the countries of the Basin, and that it continued with added force in different venues, nine times, is a matter to be appreciated. On the other hand, the altercations we hear from time to time in the media, as of recent times, cast doubts on the hopes that were created by the agreement. This reminds us of the lyric by the famous vocalist Igigayehu Shibabaw, (G.G.) that runs thus:

*Abai, Abai, nourishment of the desert
You water; you don't hear when you are called
What have you put away in the city of the Egyptians?
... Abai the river of rivers
Has various consequences.*

The countries of the Upper Nile basin should know and accept the wishes of the countries of the lower basin. Likewise the countries of the lower basin should give due attention to the wishes of the countries of the upper basin. Any step taken contrary to this will be considered as a policy of error and short-sightedness.

The Blue Nile River has created a relation of co-operation particularly among Egypt, Sudan and Ethiopia. The peoples of these countries who have a long history have drunk the waters of the Nile for centuries past; they have likewise eaten crops growing on common soil. Therefore, they can withstand the challenges of the future and improve

the living standard of their people through co-operation and not through confrontation.

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Additional views

After Dr. Dejazmach Zewde finished his lecture an extensive and intensive discussion followed. Various questions have been raised from the forum. He gave appropriate answers to the questions raised. We selected the part we thought should be printed and presented it here below. In order to reflect the spirit of the discussion we refrained from editing the grammatical side of the speeches.

Question

When H.E Dejazmach Zewde was minister of communication I was back from student life and participated in the 1st study on the Blue Nile. The issue of the Blue Nile is no short one. What I want to raise now is the view that compared to other rivers the Blue Nile is the king of all our rivers. Its volume is huge. Of the 12 basins found in the country the blue Nile's share is 43%. The Blue Nile has a huge volume of water, but its land is small-what I want to raise here is the fact that although the study on the Blue Nile river took place 45 years ago the part implemented to date is the Fincha project only. The rest of the 33 project studies remained unimplemented. And when we compare the Fincha project with the Blue Nile it is a mere drop of water in the Ocean. When the second study on the Blue Nile was carried out it took sometime to upgrade the first one because it was already a long time since it had been carried out. To cut the story short what I mean is that what is now called Karedobe dam on the Blue Nile was formerly included in the study of the Blue Nile; now it is planned to take steps; it is located in the lower part of the bridge that links Gojam and Shoa, before it joins the river known as Gouder. If the construction of the dam becomes a reality it will undoubtedly supply electric power to Ethiopia. But its advantage is mostly to Egypt and Sudan. In my view when the water of that dam is utilized and released it will elongate the life of both Rosaris and Aswan dams by not only flowing there but by carrying the silt. While the Blue Nile has a huge volume of water its neighbouring rivers, Genale, Awash, and Wabishebele have extensive land but little volume of water. At present technology has advanced. There is no reason why we don't utilize the Blue Nile waters as do others. The other point is that the tributaries of the Blue Nile River found around Geba, Metema and Omedla that join the Blue Nile across the border, have large volumes of

water. But they don't have extensive land. Perhaps when the Keradebe dam shall be constructed, the additional power to be obtained may enable us to carry out pumped irrigation and to re-activate the Tana Beles project. I would have much more to say, but as it is not possible to wind up the Blue Nile issue in a short time, I shall stop here. Thank you.

Dr. Dejazmach Zawde responded as follows:

I, too, had much to say about the 33 projects that have been mentioned, but I omitted it altogether. It is due to shortage of time that I preferred to dwell on the historical side, as the historical side is rarely raised. I agree with you that the detailed study of the projects is truly something to be proud of. As I mentioned it earlier when we started the study of the Blue Nile there was no expert on water study except Mr. Bwanka before the start of the study. Apart from Mr. Bwanka a number of Ethiopians participated in the Blue Nile study. At the time the Americans came and started to work many of them like Ato Teshome (the man who gave his views earlier) did participate in the study. Among them Hailu W/Amanuel, Demeke Metaferia, and others (basing themselves on their previous experience) contributed very useful articles in diverse journals. On this occasion I would like to thank you sincerely for raising this matter. I would be very pleased if we could meet and discuss further after you read this paper.

As for the situation of the last 50 years someone has already mentioned it. In the study carried out under my responsibility – let us say that was the first one - (before that during the Italian occupation one by the name of Dariel carried out various studies. Afterwards an Italian engineer named Kontekora had undertaken a study on Tana and its envisions) – in our time, when we were establishing the water department we had to collect the studies carried out earlier. We brought one called Petrides, a Greek national but Ethiopian citizen by naturalization, from Cairo. Petrides had served previously as attaché when Ato Berhane Markos was appointed Charge d'affaires in Ankara (Trukey), before the Italian occupation. Afterwards he served likewise as attaché with the legation in Cario. (The legate, at that time, was Tesfaye Tegegne.) We met while I was passing by Cairo and he invited me to his home. There was nothing by way of writing he had not collected at his home regarding the Blue Nile at that time. This happened at the time I was serving in the ministry

of foreign affairs. I was on my way back home after 7 months in Italy to negotiate on war reparations. Afterwards, following my transfer to the marine department and then to the ministry of works, I remembered Petrides. I got the permission of His majesty to have Petrides transferred from Cairo to Addis Ababa. Our first task has become the collection of writings and studies on the Blue Nile Basin undertaken by the Egyptians and those by Italians during the occupation. I got hold of all those undertaken by G.G. Wait (new York). (G.G.Wait was still alive at that time; I went to New York and met him there.) After all this, and after we got the 1st recognition by the Americans, teams to do the technical work to start the study had to be secured; these came from America. We could not sit around a negotiating table and negotiate with the Egyptians without knowing in advance through study, the amount of water and the amount of land we need for development; if we just sit down and cry our water, our water, this would take us nowhere. The Egyptians were saying on their part, “we have been using it since the creation of the world; you have 12 big rivers; you are blessed with rainfall; we have no rainfall; shall we, therefore, perish of thirst while the Blue Nile is available? Abai is the source of our life.”

Therefore, it was necessary to carry out a proper study in order to be able to negotiate. That is why this study had been undertaken. Special places were selected, in the country, for the 33 electric power supplies. Of these nothing worth mentioning had been constructed except the Fincha dam. Apart from this, of the 3 places that the Italians selected from the remaining projects Beles was selected. During the Derg era, while by chance I was in Sudan, I heard that EPRP fighters captured the employees and brought them there; I felt sorry to have heard that. Because fighting against Derg is one thing, but interrupting a country’s development is harmful, I thought.

Now, this study must be implemented. But where is one to get the financial capability in order to do so? Ethiopia does not have a financial market of its own to carry out such big projects. It must, therefore, have recourse to aid or loan. But if we are not in agreement with Egypt and Sudan neither the World Bank nor other countries would give us loan or aid. What is being rumoured is a lie. “If we make use of the Blue Nile Egypt would attack us. Butros Galli is reported to have said that the cause of war from now on will be not over oil but over water.” This is a

fairy tale. I don't personally believe that there will be war. If Egypt or Sudan beat us it will be in the diplomatic field. In my view, therefore, two things should be done. We must find a way of reaching agreement in as much as possible. As mentioned by someone a moment ago and as I mentioned it myself this is to the advantage of both of them too. Expansion of afforestation, for instance, is to their advantage. The volume of water decreases not because we make use of irrigation water but because of deforestation which results in drought in the area. At present the problem that exists on their part and on our own is a psychological one as I understand it. I believe that it would be good if this should be corrected in the future.

[maps and appendices follow]

Appendices

1. Riparian States

Nile Basin Countries	Population in Million	%	Basin Area (km ²)	Basin Area (%)
Burundi	6.9	2.1	14,500	0.5
Congo Dem. Republic (Zaire)	52.4	16.2	23,000	0.8
Egypt	65.2	20.2	300,000	9.9
Eritrea	4.2	1.3		
Ethiopia	65.8	20.4	368,000	12.1
Kenya	30.7	9.5	55,000	1.8
Rwanda	8.7	2.5	21,500	0.7
Sudan	31.7	9.7	1,900,000	62.7
Tanzania	34.4	10.7	116,000	3.8
Uganda	22.8	7.1	232,000	7.7
Total	322.8		3,030,000	

Source: UN, World Bank Atlas

2. Basic Data on the Nile

2.1. Egypt: Water Use Pattern

Type of Use	1999- (bem)	Planned for 2017 (bem)
Agriculture	56	66.6
Municipal	3	6.8
Industrial	6	12.4
Total	65	85.8

Source: Simon A. Mason (2004) *From Conflict to Cooperation in the Nile Basin, ETHIOPIA* Swiss Federal Institute of technology, Zurich, p 101.

2.2. Egypt/Ethiopia/Sudan: Irrigation capacity

Country	Land Under Irrigation	Irrigation Potential	Installed Percent of Total Area
Egypt	3,078,000ha	4,420,000ha	69.6
Ethiopia	8,000ha	2,300,000ha	0.4
Sudan	1,935,000ha	2,750,000	70.4

Source: Egypt, "Country Paper" presented at the VIIIth Nile 2002 Conference, held at the UNCC, June 26-30, 2000, Addis Ababa; and FDRE Ministry of Water Sector Development Programme 2002-2016 Main Report 2002.

2.3. Hydropower

Country	Potential (MW/yr)	Installed (MW/yr)	Percent of Potential
Egypt	2,983	2,845	95.4
Ethiopia	30,000	696	2.3
Sudan	1,618	238	14.7

Source: S.A. Mason, *From Conflict to Cooperation in the Nile Basin, Ethiopia* Swiss Federal Institute of Technology, Zurich, 2004, p.106; and FDRE Ministry of Water Resources, Main Report Water Sector Development Programme, 2002-2016.

2.3.1 Hydropower Development Programme in Ethiopia

Date Commissioned	Power Plant	Installed Capacity MW	Generation Capacity	Average Energy Capability GWh/yr	Firm Energy Capability GWh/yr
1960	Koka	43.2	22	110	80
1964	Tis Abbay I	11.4	10.8	85	42
1966	Awash II	32	30	182	135
1971	Awash III	32	30	182	135
1973	Finchaa	100	100	160	613
1988	Melka Wakena	153	146	543	434
2001	Tis Abbay II	73	68	359	682
		444.60	406.8	1621	2121

2.3.2 Projected for 2002-2018

		Expected Additional Output		ICS Generation Cummulative Total Capacity	
		GWh	MW	GWh	MW
2002	Finchaa	34	137	444	2258
2003	Gilgel Gibe I	180	720	621	2978
2007	Tekeze	225	981	846	3959
2008	Gojeb	105	364	951	4323
2013	PP1 after Gojeb	200	800	1151	5123
2019	PP2 after Gojeb	200	800	1351	5923

Source: Based on the main Report of FDRE Ministry of Water Resources Water Sector Development Programme 2002-2016, 2002, p.66

3. Proposed Projects on the Abbay (Blue Nile) Basin by the US-Ethiopia Cooperation Programme 1956

No.	Irrigation	Cost Eth. Birr in Thousands	Power	Cost Eth. Birr in Thousands	Multi Purpose	Cost Eth. Birr in Thousands
1	Rahad	243,130	Karadobi	1,031,002	Angar	69,935
2	Galagu	211,706	Mandaia	1,003,829	Dindir	448,472
3	Upper Birr	140,718	Bordar	942,805	Dabana	358,368
4	Gumara River	79,633	Mobil	851,079	Arjo-Diddessa	161,211
5	Ribb River	78,405	Lower Diddessa	404,885	Upper Beles	346,717
6	Megech Gravitly	76,028	Giamma	269,040	Amarti Nesha	123,020
7	Dabohila	43,531	Middle Beles	213,737	Finchaa	86,127
8	Dabus	23,433	Lower Guder	126,848	German Gilgel Abbay	
9	Upper Guder	13,962	Addis Ababa-Assab Trans.	84,891		
10	West Megech Pump	12,617	Muger River	31,088		
11	Lower Birr	12,300	Dabus	9,622		
12	East Megech Pump	11,488				
13	North East Tana Pump	9,634				
14	Jiga Spring Pilot (Jemma, Koga, Gilgel Abbay)	210				
		956,795		4,968,826		1,993,850
		12.1%		62.7%		25.2%

G.d. Total: 7,919,471,000 Eth. Birr
(100%)



Forum for Social Studies

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