

Great Infrastructure Projects Are the Only Real Alternative

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The Eurasian Land-Bridge of Leibniz

by Christine Bierre, journalist, Paris

Ladies and Gentlemen,

This session of the conference will deal with the great infrastructure projects which are at the heart of the BRICS strategy, and in that context I will speak about the “Grand Design” of Eurasian development proposed in the Seventeenth Century by the great German philosopher, scientist and political figure, Gottfried Wilhelm Leibniz, which is still a wonderful model for today.

Before coming to that, however, some remarks about the question of great infrastructure projects. These are indeed, the very basis for the industrial development of a nation. No progress is possible without modern transportation, energy, and water infrastructure.

But, it would be false to look at those projects in themselves, thus risking the danger of falling into the

mistakes of Keynesian economists, for whom what is important is to generate economic activity, in whatever area that may be, even if it's only digging holes in the ground to fill them back up again!

What is important in the BRICS strategy is that that infrastructure, and the pulleys, cranes, and excavators used in its construction, are only the concrete expression of human creative genius, and of human will to master the enormous challenges of nature for the transformation of human society.

Before those objects come into existence, there is the conception of man as a creator, opposite to that of man as a predator which predominates today as a result of the varieties of extreme liberalism that the Western financial centers, the City of London and Wall Street, have spread throughout the world.

The BRICS strategy is also nourished by a more noble vision of human civilization, by the will to build a world where all nations, whatever their size and wealth, will have the right to full development; a Westphalian world where all nations will be sovereign to make alliances with the partners of their choice, and not be forced to submit to this or that ideological bloc, or to become vassals of this or that Empire. M. Kadyshhev reaffirmed that principle this morning; the Chinese president M. Xi Jinping negotiates win/win contracts every day with small and large nations alike.

This vision of man has unfortunately disappeared in the trans-Atlantic area, where it has been replaced by that of a predator, and by the return of Empires. The vultures are everywhere: in the financial domain, in governments where they loot public wealth and the weakest among us, in war where they unleash their savagery, as in the Middle East.

France once had the opportunity to have a President Charles de Gaulle, who represented in his time the spirit of the BRICS. But now it has fallen into disgraceful opportunistic alliances, where, for a handful of dollars,



EIRNS/Christopher Lewis

Christine Bierre

France goes from the decadent American empire, to the most backward oil monarchies, without entirely excluding the BRICS however,—because, you never know, they might win in the end!

For the real France, let us reflect upon that 30th of January 1964, when Charles de Gaulle, president of a France just turned sovereign again, broke ranks with the Anglo-American bloc, announcing the reopening of diplomatic relations with another sovereign nation, China. Because, while he didn't approve of China's regime then, he made the bet, as he said it, that "in the immense evolution of the world, by multiplying the relations between peoples, one can serve the cause of men, that is, of wisdom, of progress and of peace... and thus, all the souls, wherever they might be on earth, could meet sooner at the rendez-vous given by France 175 years ago, that of liberty, equality and fraternity." In the aftermath of that decision, France left the integrated NATO command in 1966 and opened relations with the Soviet Union as well.

And it is because I am fully convinced that France can recover its age-old sovereignty and break with a western bloc, which the financial crisis and drive for Empire is pushing to world war against Russia and China—and that other European countries can also find there the inspiration to do the same—that I will present to you the immense Eurasian project proposed by Leibniz in the Seventeenth Century.

It is also because this project sets a very high standard, and that in order to succeed in what we are doing, all those who are struggling today to bring about this new world that the BRICS are creating, must nurture in ourselves this beautiful ideal.

Leibniz's Eurasian Grand Design

It was in order to change a Europe devastated by irrational wars and hostage to the demons of religious fanaticism, that Leibniz, a contemporary and collaborator of Jean-Baptiste Colbert, fought to create the conditions for peace and development throughout the Eurasian continent.



Leibniz conceived a "Land-bridge" from Europe to China in the early Eighteenth Century.

His Grand Design? An alliance between Europe and China, the most developed areas at that time, and to let Russia, which is in between the two, progress through the increase of cultural and economic exchanges between them. The relations among nations are not the same today, but the principles remain.

It is that design that Leibniz presents poetically in the preface of his work "Novissima Sinica" (News from China), by saying that:

a particular disposition of providence has made things such that the highest cultures and ornaments of humanity find themselves concentrated at the two extremities of our

continent, Europe and China... Perhaps supreme providence, by having the most advanced nations extend their hands to one another, has sought to elevate everything that is found in between, for a better rule of life.

And Leibniz adds that Tsar Peter the Great is favorable to the project and is supported in the endeavor by the Orthodox patriarch.

Leibniz was extremely lucky that both Tsar Peter the Great and the Chinese Emperor, Kangxi, were opening to Europe and showed "a great zeal to bring to their countries the knowledge of sciences and of European culture."

Having worked for years to build a privileged relation to both those heads of State, Leibniz, in his role of counselor to the Princes, attempted to change the course of history. He met three times with Peter the Great (1711, 1712, 1716), and became his advisor. The Tsar had asked him for help to "bring his people out of barbarism."

Concerning Kangxi, the relation was not direct, but through a group of Jesuit missionaries who had been working in China for a century, and who, thanks to their scientific knowledge, had succeeded in gaining the Emperor's trust, and in particular that of Kangxi, who was in power at that time. Leibniz was in epistolary contact

with many of those Jesuits, and even inspired the mission of five Jesuit mathematicians who left for China in 1685 to work with Kangxi.

Bringing Progress to Russia

All the memoirs of this impassioned dialogue between Leibniz and Peter the Great and his advisors are fully accessible today thanks to the collected works of Leibniz compiled by Fouchier de Careil.

At the heart of his proposals: “attract all active and capable men of all professions”; instruct his subjects, in particular the young ones; teach them how to “create,” by rediscovering the great discoveries of the past; translate into Russian the descriptions of all the arts and sciences; open up schools everywhere and create Science Academies in the main cities, Moscow, St Petersburg, Kiev and Astrakhan.

He called for founding libraries and observatories everywhere, and laboratories to build machines.

A century before the British, Leibniz, who collaborated with the efforts of the Academy of Sciences of Paris to develop heat-powered machines, advised the Russians to create a laboratory where the good chemists and pyro-technicians could study the uses of fire for work in the mines, foundries, glass factories and even for artillery. Like a modern day Prometheus, he said: “Fire must be regarded as the most powerful key to the bodies.”

Concerning infrastructure, he advised them to reflect on what could be done for rivers and for national planning. To think about the Volga (which could be united to the Don by canal) and to improve navigation especially on the Dnieper and the Irtysh. Make canals to transport goods, as well as to dry up the swamps, he said.

A ‘Trade of Light’ with China

Leibniz’s work in China is also a beautiful example of cooperation among nations, respectful of their best traditions, from which the sorcerer’s apprentices of color revolutions in the West could greatly profit.

In his *Novissima Sinica*, he compares the relative merits of Chinese and European cultures, which he finds almost equal. “The Chinese Empire,” he says “does not lose out in comparison to cultivated Europe when it comes to land area, and even surpasses it in terms of population.” Europe, says Leibniz, is victorious when it comes to knowledge of forms that separate mind from matter, such as metaphysics and geometry. The Jesuits worked to solve that by teaching geometry, astronomy and mechanics,—see the steam car invented

by Father Verbiest, tutor of the young Kangxi,—and by assisting in great engineering projects.

But it was the level of daily wisdom of the Chinese that totally impressed Leibniz:

If we are equal in terms of techniques, if we are victorious in terms of contemplative sciences, it is certain that we are beaten in terms of practical philosophy (I’m almost embarrassed to acknowledge it); by that I mean the rules of ethics and of politics appropriate to life and to the usage of mortal beings. One does not even know what to say about the beautiful order, superior to the laws of other nations, that rules the Chinese in all things, for the sake of public tranquility and of relations among men

This culture of wisdom and of harmony between daily life, political life and the cosmos, was the heritage of the philosophy of Confucius (551-474 BC), enriched by other philosophical traditions. Let us reflect upon the fact that already in the Eleventh Century, China had discovered linear perspective, and that the great art historian Guo Ruoxu wrote in 1074:

If the spiritual value of a person is elevated, it follows that the internal resonance is necessarily elevated and that the painting will then be necessarily full of life and movement (*shendong*). One can say that in the most elevated heights of the spiritual, it can compete with the quintessence.

Against the majority of the religious orders and vicars of the Pope who were bent on trying to Christianize the Chinese by force, and who in the end provoked the failure of Leibniz’ project, Leibniz supported the ecumenical dialogue of the Jesuits and following an in-depth study of Confucianism, he concluded that a dialog, of equal to equal, could be established between the natural theology of Confucius,—not with the revealed Christian faith,—but with Christian metaphysics.

The mission of the French Jesuit Mathematicians

Finally, to remind those who govern us, again and again, of the best traditions of our foreign policies, let us come back to the mission of the five Jesuit mathematicians to China in 1688 which contributed to found, more than 300 years ago, France’s special partnership

with that country.

Those Jesuits were the emissaries of the working group constituted by Jean Baptiste Colbert, at the Academy of Sciences in Paris, around the director of the Observatory of Paris, Jean Dominique Cassini. The aim of the group? Use astronomy to correct geographical maps and solve the great scientific and practical endeavour of that time, the definition of longitudes for navigation in deep sea.

Those investigations required the sending of scientists to different parts of the globe in order to collect a maximum of data. The mission of the five French Jesuits in China, was the follow-up to the trips of Academicians Jean Picard to Uraniborg in Denmark, Jean Rich to Cayenne, Varin to the Gore Island and the Antilles, for the same objectives.

Leibniz and Colbert set up the mission around this issue which interested Leibniz at the highest level. In his correspondence on Russia, he described that scientific project in detail, and sets it up as one of his three priorities, calling for such experiments to be conducted in Russia, especially close to the North Pole. The leadership of the team was entrusted to Father Fontaney, who was already in collaboration with other prominent academicians, such as the Danish scientist Ole Römer and Christian Huyghens, who presided over the Academy.

When they set out for China in 1685, the Jesuits were carrying in their suitcases, the tables for the satellites of Jupiter established by Cassini, and some 30 instruments among the most sophisticated of their time. Among them were two machines from Ole Römer: a mechanical planetarium which could reproduce, for any given hour, all the movements of the planets and the stars; and an eclipsorium which indicated the year, month or part of the month where the solar and lunar eclipses would occur.

As a conclusion: If Leibniz was desperate about the corruption of Europe in his time, to the point of having proposed that a Chinese delegation come to Europe to help change things, what would he say about the present situation? Where compared to a China which has made tremendous progress, and a Russia which has recovered its world power status, Europe today is playing the role of the sick man.

I think, however, that the emergence of the New Silk Road, the BRICS and the Eurasian union, can provoke an upsurge in France and in Europe. On the verge of the abyss, on the verge of a new world war, France must quickly renew its dream of liberty, and use these new

developments as leverage to rebuild a Europe of the fatherlands, for the greater progress of sciences, arts and its peoples.

Such a change will depend on our actions after this conference!

The Driving Role of The State in Large Infrastructure Projects, But the Failure of Administrative Economics

by Jean-Pierre Gerard

Economist and former member of the Economic Council of the Banque de France

Summary: “Since 1970 I have dealt with infrastructure, first for the public administration, and then for industry,” he said. His intervention centered around three ideas:

1. The state wastes national resources in its intervention, leading to a scarcity of funding for more productive uses;
2. This must lead to a new approach for infrastructure;
3. We must aim at profitability for infrastructure.

From the time of his university studies, Gerard said, we were taught the so-called Keynesian multiplier, which says that the nature of the investment is not important. He soon realized that it is not acceptable to promote infrastructure without checking its utility. Keynes’ theory was formulated at a moment when there was scarcity of money. Today we are in a different situation: The crisis has been created by an excess of cheap money, and it has been cured with the same policy. In fact, there is a monetary surplus in the non-productive part of the economy. There is a real levy on the produc-



EIRNS/Christopher Lewis

Jean-Pierre Gérard

tive side. QE [Quantitative Easing] has worsened the situation.

In the past in France, macroeconomic approaches have generally failed with some exceptions. They have consisted in:

- Horizontal approach: subsidies to production prices. The clearest example is the EU agricultural policy, which was designed to favor France, and ended up advantaging Germany.

- Sectoral plans: steel, machine tools, etc. They have been a dramatic failure and have brought enterprises to extinction.

- Nationalizations: Starting in 1981, there have been many of them: Pechiney, Thomson, Alcatel; none of them survived. Bank nationalizations have also failed.

- The choice of leadership: Managers know little or nothing about the reality of the companies.

Success was scored in the nuclear sector. It achieved the intended aim of energy independence and, although this was not planned, put pressure on oil prices.

The TGV high-speed rail service was a success at the beginning, but then everybody wanted their own TGV, even in areas with low population density, and in ten years the success became a loss.

The Channel Tunnel should have been financed at least partially by governments, and its profitability should have been calculated over 100 years, which would have avoided bankruptcy.

Today, Gerard concluded, we must allow greater economic freedom. The state and other public entities should not engage in activities with no profitability.

Southwest Asia Between Two Systems

by Hussein Askary

Middle East Director of the Schiller Institute,
Stockholm

In November 2012, in a similar Schiller Institute international conference in Germany, Chairwoman Mrs. Helga Zepp-LaRouche, stated that she had called for convening that conference on an emergency basis. She said “the reason is, that the international situation, especially in the Middle East, and the possible dangers coming from that region for the rest of the world, made



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Hussein Askary

it necessary to have such an emergency conference.”

She warned that “the situation in Southwest Asia, or the Greater Middle East, right now, is a complete and total powder keg,” and that “if this present trend of politics is continued, mankind is about to crash at full speed into a

brick wall.”

Ladies and gentlemen, we have indeed hit a brick wall in large parts of the Middle East.

The net effect of the Blair-Doctrine or “Responsibility to Protect”, that gives the right to powerful nations to abolish the sovereignty and independence of nations with military means, as most horrifically implemented in the invasion of Iraq in 2003, the invasion of Libya in 2011 and the continued attack on Syria through a combination of Western-Saudi-Qatari-Turkish backing of so-called Islamic terrorist groups such as al-Qa-eda and ISIS. The net effect, ladies and gentlemen, has been that large parts of the Middle East today are sent back into the dark ages that followed the Mongol invasion of the region and the destruction of the centers of civilization such as Baghdad in 1258.

Mrs. LaRouche also noted that the purpose of convening that conference in 2012 was “to propose a complete and dramatic paradigm shift, to end the paradigm of geopolitical confrontation and conflict resolution by war,” and to “replace it with a new paradigm. She proposed, and we as a team from the Schiller Institute and *Executive Intelligence Review* designed a plan for economic development through connecting the nations of the region with the new Silk Road, and launching a war on the desertification and drought phenomena rather than launching a war on the people of the region. That proposal exists in brief in the report “The New Silk Road becomes the World Land-bridge” commissioned by Mrs. LaRouche and issued in 2014 by *Executive Intelligence Review*.

So, the game is not over, and the chances for a reversal of this process are actually abundant. With the dynamic created by the BRICS nations for economic de-

FIGURE 1

The Nile Basin Initiative is one of many proposals for development corridors in Africa



velopment, a new system can be established, based on restoring the independence and sovereignty of nations and bringing them together around economic development and cultural dialog.

Just to inspire you and to bring real optimism into the situation, I would like to give two examples from the region, and one example from the intervention of the BRICS nations, especially China, in Africa.

In the middle of the hell that has been raging in the region in recent years, two nations have been outstanding in their commitment for the development of their economies and lifting their peoples out of poverty. These two nations are Egypt and Iran. Both nations have a great history, great populations of about 88 million people each (most of them are youth and children), massive human and natural resources, and a deep historical and cultural identity. They have been surrounded by dangers of terrorism and war. They have been subjected to economic sanctions and technological apartheid as in the case of Iran, or by sabotage of their economies through policies imposed through the International Monetary Fund, World Bank and free trade agreements with the EU and the U.S. In spite of all that, they kept their head above the water, and their eyes upon the future, working hard to build their economies with the available resources.

First Iran: Iran has made itself an indispensable part of the New Silk Road, as it worked actively since 1996 to build its national infrastructure networks of transport and energy to connect to all of its neighbors. Ports on the Gulf, the Arabian Sea, and the Caspian Sea together with railway networks across the whole country have connected the world to land-locked Central Asian nations, the Indian Subcontinent to Northern Europe through the South-North Corridor from India to Ruassia, and Asia to the Middle East and Europe through Turkey and Iraq. Iran has also persisted in building its nuclear power program in cooperation with Russia.

The first functioning nuclear power plant in the region exists in Bushehr. The Iranian government just announced that it will order a series of small-scale nuclear power plants from Russia to be placed on the coasts of the nation for the purpose of sea water desalination and power generation. Iran has been hit by a new cycle of drought, that historically stretches for 27-30 years. That has affected the massive dam and water infrastructure projects carried out in the country in recent years, which are considered some of the largest per capita in the world today.

The second example is Egypt.

Egypt was subject to destructive economic policies since the early 1980s as mentioned earlier, a fact which made the country dependant on imports of food, fuel, and all kinds of other commodities that were actually earlier produced domestically to a large extent in the 1960s and 70s. Dr. Ali Ibrahim, who will address you tomorrow, is better positioned to discuss this. I have also written extensively on the subject in *EIR*.¹ So, I leave it at this.

The January 2011 revolt in Egypt, which was a reaction to this destruction, was politically derailed and the combination of the Muslim Brotherhood rule and the re-emergence of the so-called Islamic terrorism in the “Arab Spring nations” became a major threat to the very existence of the nation. However, the Egyptian people emerged from this disaster in another revolt in June 2013, and a new leadership and new hope for the nation has emerged.

From reviewing the economic developments and plans for the future that the government of President Abdulfattah El-Sisi have made in the past 9 months alone, it becomes obvious that the thinking in the nation and its leadership is in harmony with the BRICS dynamic and the genuine physical economic interests of the people of Egypt. The building of the new Suez Canal which started late last year with breathtaking speed, is a clear indication of Egypt positioning itself as a key element of the Maritime Silk Road proposed by President Xi Jinping a year earlier. Egypt’s relationship to Russia and China especially has strengthened. Simultaneously, its relationship to President Obama’s United States and many nations in the EU has diminished.

In the Egypt Economic Development Conference held in Sharm El-Sheikh in March this year, the Egyptian government presented an unprecedented number of infrastructure projects to the world nations and companies to participate in.

Agricultural and industrial development is the key component of this new policy, but it depends on rebuilding the entirety of the nation’s infrastructure, turning the country into a hub of transport between three continents. If implemented soundly, these plans will

make Egypt a major economic power in Africa and the Mediterranean Region. Most importantly, they will make a truly independent nation, participating on equal footing with other nations in building the new world economic order. Egypt is also key to stabilizing the whole Middle East and North Africa region. An industrialized Egypt will be able to participate in the economic development of the Horn of Africa and the Great Lakes region, where Egyptian companies are already active.

Regarding the political role of both Egypt and Iran, I personally believe, that unless these two countries normalize relations and work together as the two major poles in the Islamic world, the threat of religious wars will continue to haunt it. As long as Iran and Egypt are seemingly on different sides of the fabricated sectarian Shia-Sunni tension and war, I don’t see any clear way of stopping it.

Misconceptions

We have heard and will hear more about the contradiction between the current mindset of the Transatlantic system and that of China and the BRICS nations. The predominant Transatlantic philosophy of geopolitics and zero-sum games, where nations are perceived to be in a perpetual war over limited natural resources, markets and spheres of influence, and the British Malthusian green ideology that is attached to it, has become one of the most terrible obstacles to the development of Africa especially. In dealing with water issues, our team in *EIR*, have been confronting this matter repeatedly; That alleged population growth, combined with aspirations for economic growth among poor and developing nations lead necessarily to environmental disasters, famine and war. And what do the experts in the Transatlantic propose as a solution? Well, stopping population growth and using so-called sustainable technology, not the technologies used by the industrialized nations.

In 1974 the National Security Study Memorandum (NSSM 200) was commissioned by Henry Kissinger, then National Security Advisor, and was confidential until it was declassified in 1980. It was titled “Implications of Worldwide Population Growth For U.S. Security and Overseas Interests.” What it identifies is that: Developing and least developing nations will have a rapid population growth, that will put pressure on their governments to use modern technologies to provide food and other requirements for the their peoples, and that in its turn will lead these developing nations into

1. See the three-part series on Egyptian development by Hussein Askary and Dean Andromidas in the September 6, September 12, and October 10 editions of *Executive Intelligence Review*. That series references numerous other studies on the North African region.

using the natural resources they have for their own development rather than exporting them to the U.S. and its allies. Hence the threat to the national security of the U.S. and its allies. It proposed to put a limit on population growth as the main solution. It singled out a number of nations for this population reduction policy: Those countries are: India, Bangladesh, Pakistan, Nigeria, Mexico, Indonesia, Brazil, the Philippines, Thailand, Egypt, Turkey, Ethiopia and Columbia.

Let's take Egypt for example: The U.S. spent billions of dollars on birth control programs in Egypt throughout the 1980s and 90s. At the same time, the resources of Egypt were being drained by privatization and the focus on exports. Many people say Egypt is overpopulated.

But Egypt has almost 90 million people living on only 6% of the land of their country, on a strip of land along the Nile River and the Delta. As we have seen earlier, Egypt is getting out of that bottleneck using modern technology, its scientists and its skilled labor.

So, Mr. Kissinger, we have bad news for you. What you feared will happen, is happening indeed. But not in the way you imagined.

We come to the conclusion with this example, as a contrast between the Trans-Atlantic mindset and the BRICS: In May 2014, the Prime Minister of China Li Keqiang visited a number of Western African countries, and later East Africa.

In his tour he offered cooperation with these countries on a large number of infrastructure projects, which these nations are in dire need of.

We have published a series of articles last year in *EIR*² on this matter, especially the integration of the water, power, and transport systems of the Nile Valley and East Africa with the help of China and other BRICS nations. It is needless to say that the EU and the U.S. have never contributed to any large scale infrastructure development in these regions. These countries were brutally looted by the British and other empires for more than 100 years. After independence, they had to move from one military coup to the next, and one civil war to the next, but all the while global mining companies and coffee and tea plantations continued to produce and move resources out of these countries. The lack of infrastructure made transport costs in this region

the highest in the entire world. But that is changing right now. The landlocked countries with large natural resources will have the possibility of developing their interior regions, and bringing prosperity and technological development to the population. Their potential will have a chance to be realized.

The map of Africa will change, and is already changing with the implementation of large scale infrastructure projects.

Ethiopia, for example, might never again be associated with famine in news programs, as it has launched a great development program for dam construction, modern irrigation and agriculture systems, in addition to modern transport. It will share the fruit of its massive hydropower projects with its neighbors.

There are great hopes in Africa and even in the Middle East for a different and brighter future, thanks to the positive input of China and the BRICS nations. Europe and the U.S. should participate in this rather than obstruct it.

How to Rebuild Egypt

by Prof. Dr. Saffie El Den M. Metwally
National Center for Desert Research, Egypt

During the different difficulties that have been facing the region in recent years, due to the great history, great populations, massive human, natural resources, and a deep historical and cultural identity, Egyptians have been outstanding in their commitment for the development of their economies and to combat the poverty. To achieve this target, Egypt firstly decided to combat the dangers of terrorism which have been surrounding it from all borders and from their core, create alternative methods to meet their needs from water and energy, and launched many major projects depend on the modern technologies.

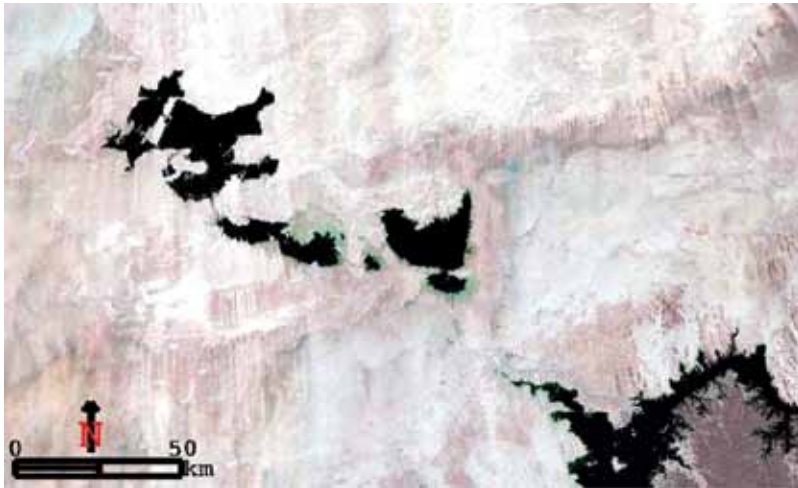
At this point, Dr. Metwally illustrated several proj-



EIRNS/Christopher Lewis

Safieeldin Mohamed Metwally

2. Hussein Askary, "A Revolutionary Development Plan for the Near and Middle East," in *EIR*, December 7, 2012. also consult www.schillerinstitute.org.



A NASA landsat photo of Toshka Lakes

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The new town of Toshka in the New Valley Project (2009). The project was begun in 1997.

ects his center is working on:

- Land reclamation of half a million hectares in the Western Desert, and the construction of five new agricultural centers and cities. Satellite remote sensing is used to detect underground water reservoirs.*

- Use of radar technology to detect land mines from World War II over a large area amounting to three small countries.*

- Fighting desertification in the Sinai Peninsula, thus also helping in eradicating terrorism which has its bases there.*

- Exploring for minerals and metals in the Eastern Desert.*

They dream to make Egypt a major economic power in Africa and the Mediterranean Region. They try to be a truly independent nation, participating on equal foot-

ing with other nations in building the new world economic order. Egypt is a key to stabilizing the whole Middle East and North Africa region. An industrialized Egypt will be able to participate in the economic development of the Horn of Africa and the Great Lakes region, where Egyptian companies are already active.

Demand for freshwater and energy supplies in arid and semi-arid countries worldwide is on the rise, because of increasing populations and limited water supplies. This problem is exemplified in the countries of Saharan Africa (North Africa) and the Middle East, where scarcity of water resources is contributing to political insta-

bility, disputes, and conflicts. Sources of freshwater in these areas include the surface runoff (e.g., the Nile River in Egypt and Sudan) that generally originates from allochthonous precipitation over distant mountainous areas with wetter climatic conditions. Other sources of freshwater in these arid and semi-arid areas include non-renewable groundwater resources originating as autochthonous precipitation that recharged the aquifers in previous wet climatic periods.

For example, the Nubian aquifer that occupies large areas (about 200,000 square km) in northern Sudan, eastern Libya, and Egypt (Hess et al., 1987) is believed to have been recharged during wet climatic conditions in the Quaternary (e.g., Thorweihe, 1982). These fossil waters are currently being used for irrigation purposes in the Dakhla, Kharga, and Farafra Oases in Egypt, and an extensive program is being developed in Libya to extract and utilize these fossil waters from the Kufra, Southeast-Sarra, Tazerbo, and Sarir areas. Because of the non-renewable nature of these waters, the artesian wells fed by this aquifer are drying up, and the depth of the water table in these areas has been steadily increasing.

Egypt is facing increasing water needs, demanded by a rapidly growing population, by increased urban-

ization, by higher standards of living and by an agricultural policy which emphasizes expanded production in order to feed the growing population. As described earlier, Egypt primarily depends on the River Nile as its primary renewable water resource. With the adoption of progressive agricultural projects to channel River Nile water to the deserts of Egypt, such as the El Salam and Tushka Canals, Egypt is approaching full utilization of its River Nile water allocation (55 million cubic meters). Thus, there is a real sense of urgency to develop alternative renewable groundwater resources in Egypt in order to cope with the ever increasing fresh water demand.

There were reasons for choosing Egyptian deserts as an appropriate location to conduct this project which could possibly be implemented over other arid regions across the world. First, Egypt's landscape and its climatic and hydrologic settings are ideal for the study and resemble those in neighboring countries. Hence, results obtained in Egypt will be applicable to many neighboring countries. Secondly, like many arid countries, Egypt major source of water is surface water in the form of Nile River and Nubian Aquifer as fossil water.

Refilling Lake Chad With Water: A Large Project for BRICS?

by Acheik Ibn-Oumar

Former Foreign Minister of Chad

Acheik Ibn-Oumar presented the idea of Transaqua, the plan developed by the Italian engineering firm Bonifica to refill Lake Chad and at the same time build an inte-



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Acheik Ibn-Oumar

grated infrastructure in Central Africa. Lake Chad is today one-thirteenth the size it was 50 years ago, Ibn-Oumar said. This is dramatic for the conditions of life of 30 million people who live there and depend on fishing, agriculture, and cattle-raising.

Transaqua involves a 2,400 km navigable canal, which would collect water from the eastern tributaries of the Congo River, enough to refill Lake Chad to its original dimensions. The project would create dams and ports, supply electrical power, and promote agricultural development.

Opponents of Transaqua use economic, environmentalist, and governance objections. Some claim that Lake Chad does not shrink, that there is historical evidence of the lake shrinking and returning to its dimensions. This is true, but we are talking about geological cycles of maybe 6,000 years. We cannot wait that long.

Opponents say that it is expensive. But Marcello Vichi, author of Transaqua, calculated that Africa spends \$20 billion dollars every year in wars, whereas \$2 billion a year would be needed for Transaqua.

Obstacles can be overcome with methods, but in all these years, there has not even been a feasibility study done for Transaqua. Mr. Ibn-Oumar repeated the proposal he made last February, that the BRICS promote the project.