

## **WATER- ENERGY- MINING NEXUS**

**By H.E. Ms. OYUN SANJAASUREN**

We all acknowledge that the world today faces an increasing number of challenges, which are complex in nature and require firm, concerted and coordinated efforts to resolve.

By the end of this century, the world is projected to reach 11 billion people. If our consumption patterns and ever increasing demand for food, energy and water continue, we will require far more resources than the planet has to offer. We will need multiple planets. Humanity must take lessons from history, and be more responsible and proactive to shift to the sustainable consumption and production that will allow our economies and societies to grow, and grow sustainably and within the means of the planet while creating equity and human wellbeing. Water is in the centre of the sustainable development.

Water is a complex resource. As you may know, the WEF 2015 global risk report identified Water crisis and water security issue as the top risk both in terms of probability and its impact. 5 years ago and before WEF reports, the top risks were all related to financial and economic issues.

Worldwide, there is an imbalance between water supply and water demand. It is estimated that 1.2 billion people live in areas experiencing physical water scarcity, while another 1.6 billion face economic water scarcity- where governments are unable to provide basic infrastructure for water needs. At the same time, demand for water resources continues to grow. Population growth, urbanization, and the transition to higher living standards have affected the demand we place on our water resources.

Water is crucial to development. While the world population tripled in the 20th century, the use of water resources grew sixfold, mostly due to increased use in agriculture. I would like now to talk briefly about the water challenges we face in Mongolia, the water management approaches we have adopted, and about potential areas for improvement.

Mongolia is a vast country, the size of Western Europe, yet with a small population of 3 million, we are the least densely populated country in the world. So, one may think that the problem of water security is not an issue. This is not the case, however.

Mongolia is considered one of the more water scarce nations in the world. Approximately 80 percent of our water supply is located in the northern quartile of our territory. Our annual renewable surface water resources are plentiful, but are scattered over large areas, however, most water resources are not readily accessible to major population centers, mining operations, and other industrial operations. Our most pressing water issue is the unequal geographical distribution of surface waters, which are also made unavailable when they freeze during the wintertime.

Mongolia's total surface water resources are estimated to be just under 600 km<sup>3</sup>. 8 Rivers contain 34.6 km<sup>3</sup> of surface water, lakes contain 500 km<sup>3</sup>, and glaciers contain 62.9 km<sup>3</sup>. The surface waters are distributed unevenly over the country. For example, 380 km<sup>3</sup> (or 63%) of the total surface water is stored in Lake Khuvsgul in northern Mongolia. The total renewable groundwater resources have been estimated to be 23.6 km<sup>3</sup>, with potentially exploitable resources of 10 km<sup>3</sup>.

Two major water stress areas in Mongolia are – first, Ulaanbaatar the capital CITY WHERE 40% of the population lives and the second is the Gobi region, where major mining operations are being developed.

Ulaanbaatar has a population of 1.3 million people. Half live in apartment blocks with central heating and central water services, whereas half still live in Ger districts, which are suburbs of our traditional yurt dwellings, where there is no modern water and sewage system. Water there is trucked to water kiosks, which people then collect by hand. With economy growing rapidly, thousands of apartments are built every year and as people transition to apartments, their water demand will increase substantially. This will place further stress on the already vulnerable groundwater resources that are currently used to accommodate the water needs of Ulaanbaatar. Energy demand is going to quadruple in the country by 2030, and tens of thousands of housing units are being constructed every year in the cities. 90% of Ulaanbaatar's water resources are extracted from underground.

The mining sector is growing very rapidly, especially in our southern Gobi region, which is semi-arid and is scarce in water, and we expect a substantial increase in mining sector's water demand over the years. Some of the largest copper gold and coking deposits of the world are located in this area.

Mining development in Mongolia is already stressing water security. Unfortunately, the water supply in Southern Mongolia is especially limited, and it is expected that this scarcity may eventually constrict the extent of mining operations.

Mining requires both energy and water. Both are in short supply in the areas where the mineral deposits are located. Major energy and water resource infrastructure is needed and is being planned to support mining development. Water demand projections show that expected water demand could exceed available resources in the high water demand scenario before 2030.

Mongolia is an example of a country that has not contributed much to the causes of climate change and yet is experiencing its disproportionate impact. The average temperature in Mongolia has risen by 2.15°C since the measurements started in 1940's – this is three times more intense warming than the global average. As a direct affect, drying of some of the smaller rivers and flows, desertification, pasture degradation, but also melting glaciers and melting permafrost are threatening our nomadic pastoralism and the future balance of our ecosystems.

We, however, don't want just to complain and sit idle. We want to be the part of the solution. Mongolian Parliament approved in 2014 the country's Green Development Strategy which aims to change our development trajectory to smarter, more sustainable path. The new package of environmental legislation,

including the Law on Water, upgraded to the new level the regulatory standards in the environmental sector.

In the Law on Water, but also importantly, in the National Security Policy document, water resources were identified as a strategically valuable wealth for the country. As in many countries, water was thought to be a free and abundant resource, however, with the new water law, an approval-based regulatory mechanism has been introduced, to maintain water use to a level that considers ecological factors and assures effective and efficient use of water.

So some of our solutions to the problem have been:

Integrated water resource management system has being introduced in the last 3 years and 29 river basin administrations have been created.

17 percent of the country is now protected area and our vision is to expand to 30%. By expanding our protected areas and restricting mining operations around Lake Khuvsgul, and the Hangai and Hentii mountain ranges, we will also protect our water at the source.

Law in 2009 banned mining and exploration in watershed and riparian areas – cca 20% of the country. Slowly it is being implemented, although for the placer operations that were already in place before the law was passed, government gave one off right to mine the reserves with the strict condition of proper environmental rehabilitation and re-cultivation of the sites.

Water royalties were increased 2-3 times – for industrial use and not for households – they only pay for water delivery services.

Higher charges for different water basins – more expensive in water scarce Gobi basins than in northern basins, underground water is also more expensive than using surface waters. However, we still need to improve and may be simplify the methodology – private sector has been complaining that it is complicated and also monitoring and implementation is still a major challenge.

Local governments – more incentives since more decision making and budget powers have been given to them. Revenues from water royalties go directly to village and provincial budgets from 2013 as opposed to the central government budget as it was previously. Important reform was that these revenues have to be used for environmental protection including water protection (30%)

SOUTH Gobi province with the population of 60,000 received almost 10 million dollars just from its water royalty payments. 80% of the water currently is being recycled by the OT copper mine project

Law on Water Pollution Fee – it was introduced in the legislation yet we found it very challenging to formulate the implementing regulations.

With the above mentioned changes in policies, we still face the following challenges: the establishment of a water resource management system, higher accountability of actors, enhanced integration between sectors, active participation of stakeholders, strict monitoring of our water supply, a robust water storage system.

## **Conclusion**

I would like to remind you about a fundamental reason for government, and that is to act on behalf of the people. It is important that when governments decide to take action on environmental issues, that they must reach out to people at the local level. This is expertise and insight to be gained, especially at the local level, as citizens have an acute awareness of how environmental issues are manifested in their area. Therefore, I urge all governments to be active in reaching out to communities and individuals.

Of course, when we are so focused on technical plans, and international meetings like this, we sometimes forget the water itself- the spirit of the water that supports our lives everyday. So, I encourage all of us, when we go home and continue to work on these issues, to know where our water- the water in our homes and offices-comes from- which river or stream or mountain, exactly – seek out the source of this water, and to praise the water and give it our thanks. Perhaps teaching our children, and ourselves, not to take clean water for granted, is in fact one of the most important steps in protecting and conserving this magnificent resource.

**Thank you.**