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LEARNINGS FROM AROUND THE WORLD

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The growing concern over the environmental conditions in many countries in the world and the impact on the macro-systems which have brought rise to calamities and climate change concerns/impacts linked to global warming and other environmental adverse effects can no longer be ignored. In a very short period of the last 50 years we have already see the massive changes and the impacts related to those changes. As countries and states try to work together towards addressing these changes and trying to control them, many organizations must work hard to manage these adverse impacts on the environment.

We must appreciate that large organizations and corporates today command wealth and socio-economic influence just as much if not greater than some sovereign states. What is needed is that the leadership and governance starting with the true stewardship of directors of these large and medium sized organizations is pronounced. Clearly the UNDP Strategic Development Goals (SDGs) give an excellent framework and whilst organizations are encouraged to study and adopt all of them, they must also focus on the top 5 or 6 goals which they can continue to as part of their business growth, influence and stewardship.

Investments into innovation, renewable energy, environmental sustainable and cleaner production and better social investments in terms of upskilling the workforce for the future green jobs that will need to be developed to support the world's green economy are all part and must be part of the Board Director's agenda. Every Board Chair must drive and lead this change.

The United Arab Emirates is leading some of its change with the drive toward the creation of the World Green Economy Organization (WGEO), see more information on https://worldgreeneconomy.org/. This is a great example of how to mobilize the economy towards sustainability.

From Water shortage to water exporting

Israel's path to water sustainability

Addressing water scarcity is a major step towards environmental sustainability of any country, let alone country which is 60% desert, such as Israel. Two main factors enabled Israel to overcome this challenge: Visionary leaders formulating progressive policies, and the private sector innovating technological solutions (such as drip irrigation).

From a country struggling with water scarcity to a water superpower today, Israel is leading the world in all aspects of integrated water management. Over the past seven decades, since its inception, Israel has developed a range of innovative technologies and techniques to tackle water shortage and desertification – from water conservation and desalination, to waste water recycling, drip irrigation and river rehabilitation.

From early days of the country, there was a realization that a master plan for water policy is required. In 1959, a comprehensive water law, making water resources public property and dictating that all water resources are made available for use by consumers, as directed by the Water Commissioner. Since then, the Israeli government has been driving the Water Technology eco-system by promoting research, and funding large project in areas of irrigation, water treatment, desalination plants, and more. Special effort was taken to address agriculture water usage; Nearly all of the nation's domestic waste water is treated and reused for irrigation. Highly advanced irrigation methods are installed in the fields, while developing new crop strains which are up to 10 times more water efficient. This knowledge is shared at Israel's largest bi-annual conference on water technologies – WATEC – which will take place on November 18-21, 2019.

However, water scarcity is a global issue, much beyond the policies or solution of any one country. To address the many challenges, India and Israel have formed a strategic water partnership, during PM Modi's visit to Israel in July 2017. A $40 million innovation fund (I4F) was created, to motivate Indian and Israeli companies to develop innovative solution to the issue. This partnership is on state level as well. In Karnataka for example, the CM, has allocated Rs. 445 crore for adopting Israeli water and agriculture technologies.

It is our hope that Israeli experience and knowledge can help drive the world towards a future where sufficient, pure water is available for all.

As nations, our actions have global consequences. Dealing with climate change & environmental degradation, therefore, requires coordinated action by nations around the world. In this special feature, we bring to you global experts discussing on the various facets of environmental sustainability and actions being taken. These thought nuggets are a pre-cursor to the international deliberations which are due at the **21st World Congress on Environment & Climate Change to be held on 4 - 5 July, 2019 at Bengaluru, India.**

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If we continue to use fossil fuels at the current rate, and wish to remain within 1.5 °C raise in global temperature, we have just 9 years left before we exhaust our global carbon budget. Therefore, both India and Germany are committed to mitigate climate change, and address it at home as well as globally.

With more than 300 days of sun and, in many regions, more than 2,500 hours of sunshine yearly, India boasts ideal conditions for generating solar energy. India's goal to install 175 GW of renewables capacity by 2022 and account for 50% of its total power generation deserves every support.

The German Federal Government is financing large-scale solar partnership projects in India to the tune of EUR 1 billion over the next five years. German companies like BOSCH, who built the world's first fully solar powered airport in Kochi, or SIEMENS, contribute their technologies. The grid-neutral Kochi airport has reduced the carbon footprint by over 3 lakh metric tons, equivalent to planting 3 million trees.

In Germany, coal plants will close completely by 2038; phased-out power stations will store excess energy produced by solar and wind farms. This is what Germans want: more than 90% of them consider clean energy to be very important; 85% want to see more solar and less coal-fired power.

Decisive Government action can save the planet; however, citizens' awareness is needed to push for policy changes – locally, nationally, and globally.

Policy and Regulatory options to encourage energy efficiency

Ministry of Power (GoI) and Bureau of Energy Efficiency (BEE) have been implementing several programs for efficient use of energy and its conservation. One of the Policy and Regulatory options adopted by BEE to encourage energy efficiency is the Perform Achieve and Trade (PAT) scheme which is one of the initiatives under National Mission for Enhanced Energy Efficiency (NMEEE) program, which was notified on 30th March, 2012.

To enhance energy efficiency in energy-intensive large industries, a novel market based mechanism action programme called Perform, Achieve and Trade (PAT) has been developed. PAT scheme is a market assisted compliance mechanism, designed to accelerate implementation of cost-effective improvements in energy efficiency in large energy-intensive industries, through certification of energy savings that could be traded. PAT flows out Energy Conservation Act, 2001 (Amended in 2010). PAT mechanism is time bound with periodic cycle of three years. PAT cycle I has achieved an annual energy savings of 8.67 mtoe (million tonnes of oil equivalent) from 478 energy intensive industries of eight sectors (Aluminium,Cement, Chlor Alkali, Fertilizers, Iron and Steel, Pulp and Paper, Textiles and Thermal Power Plants) with a total annual energy consumption of 165 mtoe.

The scheme imposes mandatory specific energy consumption targets on the covered industries with less energy efficient industries having a greater reduction target than the more energy efficient ones. The industries baseline is determined by its historic specific energy consumption. Industries achieving greater reductions than their targets, receive “EsCerts” or “energy saving certificates” which can be traded with facilities that have not met their targets, or banked for future use. A reliable Monitoring, Reporting and Verification (M&V) system forms the backbone of assessment process of the PAT scheme.

The second PAT cycle has been further widened and deepened to include additional sectors like railways, electricity distribution companies and refineries would cover more than half the commercial energy consumed in India. The third PAT cycle has included Petro chemicals and Buildings for further reducing the energy consumption in those sectors. To achieve the set targets energy intensive industries started investment in large scale waste heat recovery systems and switching off old higher energy consumption equipment (or) units.

PAT mechanism in India has brought tectonic changes in time bound implementation of energy efficient measures. Based on India’s learning experience of PAT scheme, neighbouring South Asian countries (Bangladesh and Pakistan) adopted similar policy instrument towards achieving reduction in GHG emissions.