JLASC
Journal of Latin American Sciences and Culture

Opinion Article

Climate Change: The Supreme Role of Leadership of the Youth and policy recommendations

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Abstract: Science and technology and innovation are the main drivers of social development at this stage. Modern national governance and education system should further improve the strength of innovation and entrepreneurship education. However, at present, some colleges and universities focus on professional subject education, and have insufficient knowledge and attention to innovation and entrepreneurship education. Even if they offer entrepreneurship-related courses, there are still problems such as ambiguous teaching content, weak entrepreneurship teaching atmosphere, and utilitarian teaching objectives. To this end, this paper focuses on the national double-first construction strategic tasks, innovative talent training system research, and colleges and universities' innovative talent training plan.

Keywords: Leadership, Climatic Change, Sustainable energy, Pollution.

Citation: Qamar, S. H. (2022). Climate Change. The supreme role of leadership of the youth and policy recommendations. *Journal of Latin American Sciences and Culture*, 4(5), 54-60. https://doi.org/10.52428/27888991.v4i5.274

Received: June 15, 2022
Accepted: September 23, 2022
Published: December 28, 2022

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1. Introduction

"Human capitalism can help us envision new and different forms of success for the future, just on a global scale" (The World Environment Day 2008).

Most nations today admit both the significance and the urgency of the battle against global warming, but there are still noteworthy differences on how best to achieve net zero greenhouse gas emissions and sharing the cost of doing it. Unfortunately, we live in this polarized world thus creating a lot of room for disagreement– conflict between cultures, geographies, and even generations. That, in turn, leads to a deterioration of trust which not only slows our progress in fighting climate change but spills over into other social and political issues. Adopting an acceptable leadership style can help foster concerted efforts, settlement of priorities, creative thinking an ability to bring change including target identification for geographic intervention, possible institutional arrangements (Moser & Ekstrom, 2010), and stakeholders' engagement in multi-scale processes of continual action, learning, and adaptive governance (Swart et al., 2014).

2. Actions improving the climatic change

2.1. Implementations across the globe

Tackling climate change will require working toward shared goals such as developing solutions to scale carbon capture or decarbonize infrastructure. Achieving shared climate change goals will require focus from the private sector to scale proven technologies and mobilize needed capital, and to be effective in tackling climate change, all the companies must redefine successes and shift to goals for scaling positive long-term change for the planet.

More than **130** nations have pledged to reach zero emissions by 2050 or earlier. However, only a few had by the time made out clear roadmaps and strategies of 'How to get there'. Even with all the new adherences made at last November's COP26 summit in Glasgow, global temperatures will rise by at least 1.8°C above pre-industrial levels by 2050. If we do not implement those promises, then temperatures will rise by 2-3 °C, with potentially ruinous consequences for our planet.

"*The environmental, economic, and political implications of global warming are profound. Ecosystems – from mountains to ocean, from the Poles to the tropics – are undergoing rapid change. Low-lying cities face inundation, fertile lands are turning to desert, and weather patterns are becoming ever more unpredictable*" (*The No. 1 Leadership Shift Needed to Tackle Climate Change | World Economic Forum*, n.d.)

While no one is confident of the exact nature of future climate change, it is clear that specific actions can improve your city's resilience. Furthermore, many actions against climate change have additional benefits. Those that increase climate change preparedness and downsize greenhouse gas emissions are called 'no regrets' actions or policies. Incorporating climate change into policy making does not require a separate department in most cities but it should be brought into existing areas such as transport, building, and urban planning.

2.2. Role of Government, local and Individuals

State and local governments, in turn, have a noteworthy role to play in mitigating climate change and adapting to its impacts. Those governments are particularly well-positioned to survey critical local infrastructure and take needed steps to raise roads, bridges, and critical structures, reinforce dams, protect local drinking water sources, and take other prudent steps to safeguard people and property from climate-related harm.

In partnership with governmental commodities, the private sector also has a tremendous leadership role to play to dissuade a wholesale climate disaster. As many industries emit greenhouse gases, private companies can and should investigate the extent to which those substances are being released from their own facilities. And where greenhouse gas releases are observed, those establishments must take instantaneous steps to swap to carbon-free methods of producing products and using energy.

As a Human beings, as a leader in the society, our role demands us to take full responsibility for this environment because it will be really beneficial for our generations, some of the precautionary measures that can be taken at a personal level includes, minimization of wastage of fresh water, utilizing renewable resources to fulfill at least housing demands, installing of solar panels can be fully utilized in making food, and heating systems, installing and inspection of catalytic converters in our vehicles also minimization of individual vehicles and using public transport frequently, using and buying eco-friendly tools, also utilizing 3Rs principle.

2.3. Pakistan and the scope of green energy

In Pakistan (Climate Change, financegvtpk, 2022), climatic changes are expected to have wide-ranging impacts, such as **reduced agricultural productivity, increased variability of water availability, increased coastal erosion and seawater incursion, and increased frequency of extreme climatic events**. Pakistan has some of the highest values of insolation in the world, with eight to nine hours of sunshine per day, and ideal climatic conditions for solar power generation. Federal Minister of Water & Power announced on July 2, 2009, that 7,000 villages would be electrified using solar energy ("Quaid-e-Azam Solar Park: Solar Energy's 100MW to Arrive in April," 2015).

The role of the youth of Pakistan in promoting sustainable energy is tremendous and is increasing at a rapid velocity. As Pakistan is an agro-oriented state, in the rural areas, people have been provided with solar panels to run their homes, and energy utilized in agriculture. Students are deviating massively toward working on renewable technologies, recently volunteerships include rallies of engineering students (both graduates and undergraduates) working on planning, designing, installing, and maintaining small home-based solar plants, to provide sufficient energy to those rural areas to run their demands. The waste heat emission, from energy generation through Solar PV plates is comparatively much more than by using Organic Rankine Cycle, hence the structure has to be changed to the energy production using Organic Rankine Cycle, hence we as a team are working on Solar based organic Rankine cycle as a pioneer in energy generation from the heat at the small scale in Pakistan.

The National Renewable Energy Laboratory (NREL) has developed a geospatial toolkit and solar maps to begin solar energy projects in Pakistan, as there is no authentic data available about solar irradiance. For this purpose, nine locations were recognized to gather reliable and accurate solar data. The Alternative Energy Development Board (AEDB) has installed weather stations at these excellent locations. (Irfan et al., 2019).

According to the Medium-Term Development Framework 2006, Pakistan plans to increase the share of renewable energy technologies (RETs) in the overall energy mix to up to 9700 MW by the end of 2030. The country can achieve these targets and tackle energy crises if it utilizes solar energy resources in a proper and efficient way (Irfan et al., 2019).

3. Policy Recommendations

The following **policy recommendations** have been advised for overcoming the above mentioned solar energy barriers according to Irfan et al., 2019.

1. There is a need to educate the masses about the harms and disadvantages associated with traditional sources of energy and make them aware of the benefits related to the utilization of solar energy. By launching environmental awareness campaigns to highlight the importance of energy conservation and reducing greenhouse gas emissions we can achieve.
2. All stakeholders, government, and NGOs should work in an integrated and coherent way to further increase the demand for solar energy in the country.
3. To utilize solar energy properly at the domestic level, it is necessary that householders should be given subsidies and loans to purchase solar energy equipment according to their needs.
4. Huge costs are required for the distribution and transmission networks for areas, far away from the national grid. Hence demanding the need for the development of microfinance institutions. i.e., northern mountainous areas in Gilgit Baltistan and Khyber Pakhtunkhwa, and rural areas in Sindh and Baluchistan. For the contribution to the development of off-grid solutions, this task can be assigned to banks for guaranteeing the availability of microfinance.
5. More priority should be given to renewable energy resources instead of utilizing the conventional energy sources, by policy structures.
6. Management and marketing skills should be increased to research unexplored markets, suppliers, and current solar technology.
7. There is a need to cultivate local professionals from countries' experts in solar energy technology.
8. There is a need to lessen the burden on fossil fuels by increasing the share of solar energy in the total energy mix of the country. This can be achieved by adopting Feed-in Tariffs (FIT) and Renewable Portfolio Standards (RPS). These incentives will motivate power producers to

invest more in solar energy projects.

9. Rural dwellers and people related to agricultural professions should be encouraged to buy solar water pumps and solar tube wells by demonstration projects at the community level. Hence, sufficient funds should be provided.
10. As solar energy projects are capital intensive. The public sector alone cannot manage such huge investments. Renewable policies should be made in such a way that they should motivate both local and foreign investors to invest in solar energy projects. Inducements such as immunities from import duties and tax markdowns will be great endeavors in this respect.
11. Local designers/investors should be given financial benefits regarding the startup cost and arrangements, as this process is feared of being a bit costly.
12. The formation of National Energy Research programs by the government is the most awaited. Ample funding should be provided for R&D to prepare home-based, energy-efficient solar energy equipment. Research activities should be carried out by university students and research organizations to develop cost-friendly and equally modern solar energy devices for residents and commercial users.
13. Undergraduate and Graduate students should be given more opportunities to participate in ongoing renewable projects and should be encouraged and funded for their individual projects under the supervision of their associate institutions.

Increasing the frequency of national-sized, competitions, exhibitions, and innovation weeks for the undergraduate students, freshly graduated students, and early career engineers to showcase their research projects eventually leading to an increase in the number of new ideas available. Regional and international cooperation should be enhanced to transfer technology, and knowledge management mechanisms, train local manpower, improve the manufacturing of key parts, and learn from each other's experiences.

4. Adaption strategy and initiative

Adaptation initiatives are occurring at multiple geographic units and decision of scope (e.g., impact assessment, design of policies, process planning and technology use), (Gorddard et al., 2016). However, substantial measures are crawling behind for several reasons eg, because of an overreliance on complex climate change impact models, (Dupuis & Knoepfel, 2013) scale inspection mismatches (Cash & Moser, 2000) or impaired/insufficient consideration of serendipity in the definition of factual implementation responsibilities of stakeholders (Ford et al., 2011).

5. Conclusion

As leaders, we must communicate pleasingly. We need to inform all stakeholders about what we have already done, about our plans for the future, and how these will affect them. By establishing better trust, we will move at a faster pace toward our end goal. The result will be

a simple, righteous circle (Dietz, 2013). All participants must play their part as responsible citizens to create a better world. Dealing with long-term climate-related problems in local contexts might conflict with the day-to-day priorities of the populations so so the leading agents need to acclimate their approach to consider stakeholders' multiple interests, different understanding levels, and values as well as perceptions of urgency along the adaptive cycle (Stott & Huq, 2014). At different stages of subprocesses of the cycle, actors and challenges can change due to the variability in the nature of the task demanded and decisions that need to be made (Prins & Rayner, 2007). For each rostrum and subprocess of the adaptation cycle, leading agents might need the support of formal authorities such as public institutions to implement measures, legitimize the process, and guarantee sustained resource flow while maintaining rightfulness (*Structured Decision Making: A Practical Guide to Environmental Management Choices | Wiley*, n.d.) and stakeholders' participation. Since challenges will vary across the cycle, agents will have to adapt their leadership style or relay leadership to other agents depending on the task (e.g., some will have better legitimacy and credibility to lead large consultations (Füssel, 2007), and convoke stakeholders for hybrid forums or smooth out conflicts and facilitate learning), (Conway & Mustelin, 2014).

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