


## GREEN HYDROGEN FROM BIOMASS

A team of researchers from the Bengaluru-based Indian Institute of Science (IISc) has developed an innovative technology that promises to produce hydrogen from the abundantly available biomass itself instead of the traditional raw material of fossil fuels. India uses nearly 50 lakh tonnes of hydrogen for various processes in different sectors, and the hydrogen market is expected to grow substantially in the coming years. But most of the hydrogen presently comes from fossil fuels through a process called the steam methane reforming route.

The new environment-friendly process consists of two steps. In the first step, biomass is converted into syngas - a hydrogen-rich fuel gas mixture - in a novel reactor using oxygen and steam. In the second step, pure hydrogen is generated from the syngas using an indigenously developed low-pressure gas separation unit. Announcing the development, an IISc press release noted that the new technology was also significant as it produced 100 gm of hydrogen from one kg of biomass even though only 60 gm of hydrogen is present in 1 Kg of biomass. This is because the steam, which also contains hydrogen, participated in the reaction. The process, it added, is environmentally friendly for another reason too. It is carbon negative. It has two carbon byproducts. One is solid carbon, which serves as a carbon sink, and the other is carbon dioxide, which can be used in other value-added products. The project was supported by the Ministry of New and Renewable Energy and the Department of Science and Technology of the Government of India. The team also acknowledged the assistance of the Indian Oil Corporation Limited in scaling up the technology to produce 0.25 tonnes of hydrogen per day for use in hydrogen-powered fuel cell buses. Dr S Dasappa, team leader and Professor at the Centre for Sustainable Technologies, and Chair of the Interdisciplinary Centre for Energy Research at IISc, said, that the technology dovetails nicely with the Government of India's National Hydrogen Energy Roadmap initiative, aimed at promoting the use of hydrogen as a fuel and reduce dependence on fossil fuels. In addition, the green hydrogen could also be used in the steel industry to decarbonise steel, in agriculture industry to manufacture green fertilisers, and in many sectors currently using hydrogen produced from fossil fuels. Further, the same platform can also be used for methanol and ethanol production. It is a step towards achieving the Prime Minister's goal of Atmanirbhar Bharat, he added.



OFF 'D' CUFF

### A Call for Unity and Compassion

As the world bears witness to record numbers of individuals being impacted by the pandemic, there is a need for global unity and compassion to meet the magnitude of the challenge before us.

We are all going through a difficult time, he said. The pandemic has hurt the lives of many, many people around the world. When we face a challenge that impacts so many people, the solution to that challenge must also include many people. We cannot find a solution to this virus by ourselves, or as just one town, one state, or one country. Our world is in need of human unity. We need to come together and deal with the situation in a compassionate manner, and follow the scientific guidance to practice social distancing to help curb the spread of the virus.

Each of us will need to think clearly and act in a way that will improve the situation. This is a moment that calls for each of us to be giving, caring, and generous. We should help not just those we know, but those whom we do not know. Generosity comes from within. It is a gift from God. It is a state in which our heart opens, and we strive at every opportunity to use our resources to make the lives of others better, whether they be our family, our friends, or strangers.

It is not we who help, but God. The opportunity to serve is a great blessing.

It is also an opportunity for us to realize we are all one and the same, and this helps to curb the ego.

Service should be done in humility, such that we abide by the Golden Rule— “Do unto others as you would have them do unto you.”

We are, after all, serving an extension of ourselves.

It is not how much we do, but how much we do based on what we have. It is not how much we give, but how much we

## Naya Jammu Kashmir-post abrogation of Article-370

■ REYAZ SHAH

When on August 5, 2019, Union Home minister announced in Parliament the abrogation of Article-370, the vast silent majority of the state breathed a sigh of relief. This sense emanated from the fact that the controversial article laid the foundation for deprivation and marginalization of certain sections of the society, while at the same time ensuring hegemony of a few dominant families in the state. Below, I enlist the reasons for my sense of relief when the abrogation of the controversial Article-370 was announced from the floor of the Indian parliament.

Dismantling Political Hegemony: It is a known fact that the Article-370 put severe restrictions on the political aspirations of people in J&K. Article-370 laid ground for deep entrenchment of the political domination of a few political families, while at the same time heavily restricting the political aspirations of several young and dynamic leaders. It is no surprise, therefore, that no prominent young leader has been able to rise through the ranks of the political parties in the state.

Strengthening Grassroots Democracy: Article- 370 had restricted the process of devolution of powers to the local bodies. Even the Panchayati leaders, I have spoken to, believe that before the abrogation of the Article-370, the devolution of powers to the Panchayats was only on paper. Local bodies didn't receive any funds and were left to fend for themselves. They also maintain that despite several petitions and requests, minimal funds were released for the local bodies thus leaving them at the mercy of the authorities. Post-abrogation of Article-370, things have started changing for good. As per the directions of the Union Home Minister, the bureaucracy has intensified the process of devolution of maximum powers to the local bodies. According to latest regulations introduced for the seamless functioning of

Panchayats, the village Sarpanch will now head the Village level Biodiversity Committee along with all the Sarpanchs of J&K, thus making Sarpanchs responsible towards the State forest land falling in their villages.

Effective changes have been implemented in the working structure of the Panchayati Raj Institutions which was not the case earlier. The departments and Officers are now accountable to Panchayats. The Sarpanchs now directly or indirectly releases the salary of various staff and workers working in the Panchayat, making the staff more accountable to him which was not the case earlier.

End of Subjugation of Marginalized Sections of the Society: The announcement of the Government of India of abrogating Article 370 of the Indian Constitution ushered in a new ray of hope for the refugees from West Pakistan. With the abrogation of the Article 370, their long pending demand of being given the citizenship of Jammu and Kashmir was finally fulfilled. Also, the severe discrimination against the refugees of West Pakistan in the field of Jobs, employment, education, government schemes which was perpetuated by the Article-370 is now a thing of the past. With the abrogation of the controversial Article, these people can now avail the benefits of the Central reservation reserved for the people belonging to the Scheduled and other backward castes from which they had been deprived till now. In a similar case, Article 370 prevented the people from the Vahniki community of the erstwhile state of Jammu and Kashmir from being citizens of the state. Since, they were denied the Permanent resident certificates (PRC), they were severely discriminated in getting employment in state institutions or admission of their children's in state run institutions.

Complete integration of region: Post Abrogation of Article-370 allowed the implementation of the Central laws in the Union Territory of Jammu and Kashmir. Right To

Education (RTE) is now applicable in the region thus allowing the children belonging to the deprived sections of the society to have access to high quality education free of cost. Reserve Bank of India now exercises complete control over the financial regulations of the banks in the state. This allows a greater degree of transparency and financial accountability of J&K. The jurisdiction of the Comptroller and Auditor General (CAG) of India now extends to the Union Territory of Jammu & Kashmir, thus making it accountable. Additionally, more than a dozen liberal laws passed by the Parliament of India years ago, can now be implemented in J&K. This allows a broader integration of the region with the rest of the country.

Women Empowerment: With the scrapping of the controversial Article-370, women would no longer be deprived of their property rights in J&K if they get married to a non-resident. Article 35A, which emanated from Article 370, prohibited them, till the abrogation of the article, to be property owners if they marry an outsider. Article 35A also empowered the J&K government to decide who could be a 'permanent resident.' Only a permanent resident could acquire land, get a government job, settle in the state, etc. Putting restrictions on the choices of the residents of a state is patently illiberal; and putting restrictions on the basis of gender is anti-women to boot. Article 35A and Article 370, thus, were blatantly against the ethos of our constitution and the principles of justice, liberty, equality, and fraternity that it espouses. With the abrogation of the Article-370 and with it Article 35-A, women in Jammu and Kashmir (J&K) can now buy real estate and transfer property to children, even if they get married to a non-resident, as Article 35A has automatically become void with the scrapping of Article 370.

Economic Development: The heavily

restrictive land laws had put a severe constraint on the free flow of investment from the rest of the country into Jammu and Kashmir. The region, thus, missed an opportunity to be a part of India's growth story. With the implementation of the Central laws in the Union Territory of Jammu and Kashmir, following the abrogation of Article-370, more favorable conditions for the economic growth and prosperity of J&K have been created. Earlier, industrialists from outside the Valley were reluctant to invest here. Now industrialists, instead of getting land on lease, will have the privilege of owning property here. This may attract non-local industrialists to revive the sick units alongside starting fresh ones. While a lot still needs to be done for the realizing the vision of 'Naya Jammu Kashmir', the annulment of Article-370 has laid a solid foundation for its manifestation. Similarly, the heavily restrictive land laws restricted the free flow of investment from the rest of the country into Jammu and Kashmir. The region, thus, missed an opportunity to be a part of India's growth story. With the implementation of the Central laws in the Union Territory of Jammu and Kashmir following the abrogation of Article-370, the Right To Education (RTE) shall be applicable in the region thus allowing the children belonging to the deprived sections of the society to have access to high quality education free of cost. Additionally, several other central laws extending benefits to the marginalized sections of the society shall also be now implemented in J&K. Abrogation of the Article-370 provides a unique opportunity for the youth, women along with the marginalized sections of the society to be a partner in the growth & development of the state by taking advantage of the immense opportunities which have now been made available in the region.

## Abrogation of Article-370: Ushering in a new era of hope

■ SNEHA SHARMA

The newly carved Union Territory of Jammu & Kashmir has witnessed an unprecedented level of growth and development in multiple sectors since the abrogation of Article-370. In the erstwhile state of Jammu & Kashmir, womenfolk, deprived classes and other backward castes of society were heavily discriminated against and were deprived of even their basic rights. Article 370 had proved to be an inhibitor for the growth and development of the region and with its annulment, the region is witnessing a rapid pace of all-round growth and development. Several indicators are confirming that the region is witnessing a fast pace of all-round growth.

The property rights in the erstwhile state of Jammu & Kashmir were heavily biased against the women. Women in the erstwhile state of Jammu and Kashmir, if married outside the state were deprived of all the property rights. Even their state citizenship was annulled once she had married outside the state. One of the major advantages of the abrogation of the Article-370 has been the unshackling of the chains of bondage of

women allowing them an equal social status in the society. With the scrapping of the controversial Article-370 by the Government of India, the women would no longer be deprived of their property rights in J&K if they get married to a non-resident. Article 35A, which emanated from Article 370, prohibited them, to be property owners if they marry an outsider. Article 35A also empowered the J&K government to decide who could be a 'Permanent Resident.' Only a permanent resident could acquire land, get a government job, settle in the state, etc. Another section of the society, whose deprivation continued unabated till the abrogation of Article-370 are the refugees from the West Pakistan. They had been deprived of the citizenship of the state and were not issued the permanent resident certificate (PRC). Similarly, the sanitation workers brought in the state in 1953 to quell protests were also deprived of their citizenship rights. Both of these marginalized sections of the society were unable to get employment in the state and were also deprived admission in the state run educational institutions due to being deprived of the citizenship of the state.

Abrogation of Article 370 of the Indian Constitution ushered in a new ray of hope for these two marginalized sections of the society. The severe discrimination against the refugees of West Pakistan in the field of Jobs, employment, education, government schemes which was perpetuated by the Article-370 is now a thing of the past. With the abrogation of the controversial Article, these people can now avail the benefits of the Central reservation reserved for the people belonging to the Scheduled and other backward castes from which they had been deprived till now. Also, the refugees from West Pakistan are now having an equal right over the employment opportunities in the Union territory of Jammu Kashmir which wasn't the case till Article-370 existed.

These developments will further motivate the younger generation to have high hopes and aspirations from their careers. They can now avail the vast opportunities especially in the field of education, employment and other avenues for the betterment of their future. For the first time since their displacement, the refugees from West Pakistan are made to believe themselves

as being equal citizens of the land on which they live and work. 'Sky is the Limit' for the new generation youth of the West Pakistan refugees as the chains of the bondage has been finally unshackled and their wings have been set free to live the life of their dreams. A particular postulate of the controversial Article 370 of the Indian Constitution barred outsiders to acquire property in the state. Citizenship was denied to outsiders irrespective of the numbers of years he had spent in the state. By imposing such restrictions, Article-370 made integration of J&K with the rest of India difficult. Also, being denied the rights to acquire property in the state led to sense of alienation among people coming from outside. Social science experts have also maintained that among several drawbacks of the Article 370, the most under talked has been the threat it posed to the fabric of social inclusion.

"When an individual from outside Jammu Kashmir and living in J&K is discriminated against, he is bound to carry the sentiment back to his own village", observed an expert from Jammu region.

## Apt time to control population explosion

■ SHYAM SUDAN

India is the second most populous country of the world. Every year world population day is celebrated on 11 th of July internationally to aware the people about the problem of increasing population and its consequences at world platform. Asia continent is the most densely populated area of the world. Because the world most populous counties i.e., China and India are located in this continent with their mammoth structure of population. Increasing population in this continent is continuously posing serious threat for our congenial existence on the globe. Because we have limited natural resources and geographical area for our survival but the population in this region is continuously increasing with a geometric ratio. Such things create an imbalance between the nature and our existence on this planet. Due to increase in population there is struggle for existence and fight for utilization of various natural cum man made resources. As a result we have seen a continuous rivalry and internal disputes between different nations of the world for their existence. In our neighbour China is continuously putting hurdles for his neighbouring countries due to her expansion policies .There are lot of positive and negative outcomes of this rapidly growing population density in different nations of the world. There are lot of reasons responsible for this sudden spurt in population size in last few decades. Now with the advancement in medical science and other technological innovations now the mortality rate is very low as compared to our past. Moreover there is no legal check and control over the birth rates of newly

born infants in these countries. Lack of education is another factor responsible for increase in population growth in Asian countries. People at till date have not properly aware about the hazards of this increasing population and its consequences. They even think that it is the blessing of God. When any government has tried to make some policies or law for its controlling, generally people start advocating in its favour and say that this is a natural blessing and we have no right to interfere in this biological process. At some point religious ignorance is responsible at some extent for increase in population within some specific religion. Because a fake religious minority phobia has been created by some orthodox section of society. However in China there is provision of legal restrictions over this problem. Because they felt that increasing population always put a hurdle in their development and advancement. Now in our country few states has started the campaign for this vulnerable problem. Recently in Assam government has passed the law for two child norms. In western countries growth and density of population is low as compared to Asian and African countries of the world. Due to their low density of population in western countries we have seen a standard of life and human values in those nations. But here in Asia we have confronted with many problems that are interlinked with population growth. Rapid population growth poses other interlinked problems like poverty, unemployment, increase in crime rates and struggle for existence and fight for utilization of resources. Recently we are facing the crisis of COVID pandemic

and we have noticed that due to our vast population size it is very difficult to run the mass immunization programme against this viral infection. Those countries which have limited population has completed this immunization programme comfortably. In our country we are facing lot of problems with this growing size of our population. Every year government has launched various kinds of mega nourishment and employment generation schemes for the welfare of general public. But to mammoth size of our population these schemes couldn't work properly and helpful for all the people. As a result we have seen that the percentage of below poverty line people is continuously increasing every year. Due to limited resources it become very difficult to feed all the empty stomach with nutritious and healthy diet. we have greater percentage of young population in the world. No doubt we are at advantage of many millions energetic working hands but side wise we have the pressure of feeding of many millions mouths. Our urban population growth is very high as compared to our rural areas. People generally migrated in these big cities in want of some work and other life related comforts. This thing creates more problems in our cities and urban areas.

Every year government and other NGOs has launched various awareness campaign in this direction to aware the people about this man made devastation. Many literate and educated people now realized the ill consequences of this population explosion. They are now focusing on short family structure. But still large segment of our population is totally unaware about the hazards of this population explosion. There is an urgent need

to bring some sort of legal restrictions over this problem. Structure of two members family must be needed to control this rapid explosion of population. If our rate of population growth is going with same pace then in coming year we will face the most vulnerable situation due to this population growth. World Population Day is the best time for brainstorming over this issue. Merely organizing debate sessions and rallies we could not get the desirable result in this direction. Some strong legal restrictions and binding are necessary to solve this issue on priority basis. Proper alignment and balance with nature and nature resources is necessary for the welfare of every living creature on this planet. These things are in our hands and control we can't blame the nature for this man made devastation. For a civilized and cultured society it is necessary to suggest some remedial measures for those things which are creating hurdles for our existence on this earth. We are the most sensible creatures on this living planet.

Such kind of carelessness and ignorance is not design for us. It is our foremost responsibility to save the future of our coming generation. World population day is celebrated across the world to aware the people about the negative impact of increasing population on this planet. We must realize this fact in mind .It is not merely an event like other cultural programmes and public celebration. If our population continues at this rate, then we will be further behind in every areas in coming years. Now, it is apt time to think over this menace of population explosion otherwise we will face lot of trouble in every walk of life.

### YOUR COLUMN

#### Abe's legacy

Dear Editor,

With the assassination of former Japanese PM Shinzo Abe

on July 8, the world has lost one of its finest leaders. A champion of democracy and gender equality, Shinzo Abe was a towering personality, who contributed immensely to Japan's economy during his term as prime minister. A remarkable administrator, he was Japan's longest serving PM, a testament to his popularity. But unfortunately, like Indira Gandhi and

Benazir Bhutto before him, his popularity also created enemies among fringe radical groups, leading to his assassination. Nevertheless, his reforms are destined to benefit the Japanese people for generations to come. May his soul rest in peace.

Jubel D'Cruz.

