

EARLY WARNING

Implementing effective early warning systems for various types of disasters, such as tsunamis, hurricanes, and floods, can provide crucial time for communities to evacuate and take necessary precautions.

Educating communities about potential risks, disaster preparedness, and response strategies can empower individuals to take proactive measures to protect themselves and their families.

Providing training to emergency responders, local authorities, and community volunteers can enhance their ability to effectively respond to disasters and mitigate their impacts.

Developing comprehensive emergency response and recovery plans, including coordination mechanisms and resource allocation strategies, is essential for efficiently managing disaster situations and facilitating recovery efforts.

Collaboration between countries and international organizations can enhance disaster preparedness, response, and recovery efforts through sharing of resources, expertise, and best practices.

Protecting natural ecosystems, such as mangroves, forests, and wetlands, can serve as natural buffers against disasters and contribute to overall resilience.

2024 election may turn to be a one-sided Affair

■ OMKAR NATH KOUL

Now that the Lok Sabha election of the biggest democracy of the world have been announced. There is much fervor and enthusiasm among the people ,but there is not such an intense fervor among the political parties as the general election 2024 is unfortunately turning to be a one-sided affair and there is thus no or little fervor about the elections among the political parties .Perhaps Prime minister Narendra Modi is absolutely right when he said that there is no challenge of election as the INDIA opposition bloc is a divided house as there is no unity of direction and unity of purpose in the opposition parties and some of its constituents are still unable to announce seat sharing and it seems that the bridegroom of the election Barat has not been announced and thus there is much question mark about the fight of election 2024.In such a situation it seems that that 2024 Lok Sabha election may turn out to be a one-sided affair and thus this election will be devoid of sheen ,interest and it may be uninteresting as the opposition alliance is very weak and divided and so it can hardly take on the formidable BJP in the general elections .The fighting of any election is generally a two party or multi-party affair but the 2024 elections are turning into a one party affair and thus the general election 2024 seems to be devoid of interest as this may not be an interesting phenomena and thus political parties and the public do not attach much interest in the general election 2024 as the PM has said in an election rally that this time the results of the general election has come out before the actual fight and counting of votes on 4 June 2024.This is not a good augury for the successful working of a dynamic and vibrant democracy which India has the distinction of being .As India gears up for general elections in 2024,the ruling BJP of the prime minister Narendra Modi sits comfortably in a pole position as the opposition struggles to play catch up .Now that the voters in five states have delivered their judgments in a clutch of recently concluded assembly elections ,the eyes of 1.4 billion Indians and those observing from abroad -turn to the country's general elections announced a day .The results of December 3 state polls provided a big boost to BJP of prime minister Narendra Modi.BJP swept elections in the Hindi belt states of Chhattisgarh ,MP, and Rajasthan. The lone victory for the opposition Indian national congress also known as congress party figured prominently in the Mizoram battle .These results confirm what is already common knowledge as far as 2024 parliamentary elections are concerned ,the BJP remains firmly in pole position .This advantage is principally driven by Modi's enduring popularity .According to Morning Consult ,which tracks the weekly approval ratings of more than twenty democratically elected world leaders ,78 percent of Indian's surveyed in late November approved of Modi's job performance .Domestic opinion polls confirm that Modi's popularity remains intact and that this continues to fuel his party's dominance. The biannual Mood of the Nation Poll from India Today has consistently shown ,including as recently August 2023 ,that the BJP led NDA would handily capture a majority of seats in the Lok Sabha ,even if its majority reduces compared to its 2019 tally when it notched 353 seats .However ,elections are popular demonstrations of the will of the electorate ,they are not pre-ordained coronations .Past experience -not least the previous NDA government's surprise upset at the hands of the congress party -led by UPA in 2004 -suggest that Indian voters do not thoughtlessly conform du jour .As the road to 2024 begins ,five issues are worth watching ,the waning predictive power of state elections ,the challenges of opposition coordination ,the battle for backward castes ,the arms race for competitive welfarism ,and the emergence of foreign policy as a mass issue. The first issue to keep in mind is the limited predictive power of the recent state assembly polls. While it would be churlish to deny the BJP its celebration ,it would at the same time be shortsighted for the party to believe that these results mechanically predict how voters in these five states will behave in the general elections .In 2014 and 2019 ,the BJP was aided in its quest to attain a single party majority in parliament by fragmented opposition and same will be the case in 2024 general elections as the INDIA alliance bloc is divided and it fails to have unity which is so essential for fighting an election .In such a political situation ,there is free for all in the BJP camp to win the general elections .It may be a smooth affair for the BJP to fight the general elections given the fact that the opposition is a divided house and thus opposition is not a challenge for the BJP led NDA .The BJP was facing not a unified opposition but several opposition parties competing each other than fighting the BJP .The inevitable will be fracturing of the opposition vote .The opposition ,after two successive electoral defeats in parliament ,seems determined to learn from the past failures. The third factor to consider in the battle over the allegiance of the Other Backward Classes-OBC ,the largest single voter bloc in India ,likely accounting for more than 40 % of the population .The electoral transformation of the BJP under Modi owes its success ,in large measure to the party's ability to attract OBC's into its fold -snatching key voters from the congress party and from so called Mandal parties in northern India ,which mobilized on the basis of empowering backward castes .The fourth factor shaping the 2024 fight is the impact of welfare schemes on voting behavior .This welfare push has been coupled with the governments embrace of direct cash transfer ,which have funneled government benefits directly to the bank accounts of the beneficiaries .A final factor informing the 2024 elections is harder to pin down -India's evolving role in the world .As the dates and schedule of general elections has been announced ,the incumbent BJP undeniably maintains the upper hand .It is home to India's most popular leader ,most formidable political organization and most savvy marketing apparatus .In short it can be opined that the 2024 Lok Sabha elections may turn to be a one sided affair without there be any tough challenge for the BJP and this may turn the election wave in favor of the BJP.

(The author is a columnist, social and KP activist).

I understand emotions more than anyone else. I study emotions like a biologist studies various species.

-Ram Gopal Varma

Challenges and Opportunities in Fish Farming in J&K

■ DR. BANARSI LAL

Union Territory of Jammu & Kashmir is known as the tourists' destination due to its munificence of blossoms and magnanimity of resorts. This territory possesses abundant water resources and has a tremendous potential for fish farming in India. The perennial fresh, pollution free and well oxygenated water resources blessed to Union Territory of J&K with rivers, springs, lakes etc. This sector has witnessed a substantial surge especially in last few years. The land and water efficient fish culture technologies such as Recirculating Aquaculture System (RAS) and Biofloc have been introduced in the year 2020-21. This sector is very diverse and dynamic as it is helpful to generate income and employment among the farmers. Union Territory of Jammu and Kashmir serves a congenial habitat for a variety of fish species due to large number of cold water resources. J&K is blessed with Rivers like the Chenab, Indus, Jhelum along with lakes like Dal lake, Wular lake, Manasbal lake and Mansar lake. In J&K the first batch of 10,000 eggs of trout arrived from the United Kingdom in the year 1899 but all of them perished. Department of Fisheries was created in 1903 in J&K to promote the fish farming. J&K produces more than 20.00 thousands tonnes of fish production because of adoption of modern aqua cultural practices. Kashmir region produces more than 80 per cent of the fish production and Jammu has also emerged as a major producer of animal protein. The fish production data of four decades reflects increasing trend of production in all commercially important species of both the provinces. Union Territory of Jammu and Kashmir is known as the tourist destination due to its munificence of blossoms and magnanimity of resorts. This UT is holding huge water spread area of around 57000 hectares out of which about 24000 hectares are in the shape of lakes, marshy areas and reservoirs and 23000 hectares in the shape of river systems. Temperate and sub-tropical zones of J&K offer a potential resource for the development of cold and warm water fisheries including Trouts, Schizothoracines, Indian major carps and Chinese carps. In Jammu region Jammu district leads in fish production, followed by Kathua and Udhampur. In Kashmir region Baramulla district leads in fish production. Union Territory of J&K has immense potential in fish farming. There is need to upgrade the technical knowledge of fish farmers and modern technologies on fish farming should be provided to them. There is need to build a roadmap to mitigate the fish requirement in J&K.

India possesses 2.4 per cent of the global land area and sustains 17.74 per cent of the world population. There is huge potential of aquaculture, inland and marine fisheries in India. In India fish farming is a flourishing sector and a very important economic activity. This sector engages over 14.50 million people at the primary level. This sector transformed from traditional to commercial scale and has led to 11- fold increase in just six decades. This sector registered an overall annual

growth rate of about 4 per cent. This sector has contributed around 0.91 per cent to the National Gross Domestic Production (GDP) and 5.23 per cent to the agricultural GDP. Besides meeting the national protein demand and livelihood, fisheries also earn foreign exchange to the tune of over US\$ 5.51billion. This justifies the importance of this sector on the country's food, economy and livelihood security. India constitutes about 6.30 per cent of the global fish production and 5 per cent of global trade. India has attained the second largest fish producing and second largest aquaculture producing nation in the world. This sector has been named as the "Blue revolution". Considering the limited scope of the capture fisheries from coastal waters and natural inland waters like rivers and estuaries, emphasis on aquaculture and culture based fisheries from reservoirs and floodplain wetlands has been given to meet the targeted fish requirement.

Major objectives of blue revolution is to fully tap the total fish potential of the country both in the inland and the marine sector and triple the production, to transform the fisheries sector as a modern industry with special focus on new technologies and processes, to double the income of the fishers and fish farmers with special focus on increasing productivity and better marketing, post-harvest infrastructure including e-commerce and other technologies and global best innovations. The Ministry of Agriculture and Farmers Welfare, Department of Animal Husbandry, Dairying & Fisheries has accordingly restructured the scheme by merging all the ongoing schemes under an umbrella of Blue Revolution. To provide focused development and management of fisheries, covering inland fisheries, aquaculture and marine fisheries including deep sea fishing, mariculture and all activities undertaken by the National Fisheries Development Board (NFDB). India is blessed with varied potential resources in the form of rivers and canals, floodplain lakes, ponds and tanks, reservoirs and brackish water. The marine fisheries resources are estimated at 4.41 million metric tonne and their activities spread along the country's long coastline of 8118 km contributed by 9 coastal states, Andaman & Nicobar; Lakshadweep islands with 2.02 million square km Exclusive Economic Zone (EEZ) after declaration of the EEZ in 1976 and the continental shelf area of 0.53 million sq.km. With sovereign rights on the EEZ, India has also acquired the responsibility to conserve, develop and optimally harness the marine living resources within this area. In terms of revenue, some of the high value species such as Tunas that occur in the oceanic waters are yet to be optimally harvested. The marine fisheries development has its major thrust areas on research on biology of commercially important species and monitoring their stocks for proper management; judicious exploitation and conservation; conducting exploratory surveys and mapping of the productive fishing grounds, locating new areas and resource through the application of remote sensing and carrying out environmental

studies related to fisheries, better harvesting technologies including the design of various fishing crafts, gears, fishing techniques, methods of landings and post-harvest processing and utilization. Further, the use of mechanical fishing accessories, ancillary fishing equipment and electronic testing devices of practical value in fishing operation were added to improve the catch per unit effort (CPUE). National Policy on Marine Fisheries, 2016 (NPMF) recommends that the overall strategy of the NPMF, 2016 will be based on the pillars of sustainable development, principle of subsidiarity, partnerships, intergenerational equity and precautionary approach.

Research and development efforts in the last five decades have greatly improved average fish yields in the country making carp culture an important economic activity. Indian Major Carps (IMC) Rohu (Labeo rohito), Catla (Catla catla), Mrigal (Cirrhinus mrigala) were the principal species cultured in ponds since ages. Species like Labeo calbasu, L. gonius, L. bata, Puntius pulchellus, P. sarana, P. bolus and Cirrhinus cirrhosa are considered to be important species due to their production potential, high market price and consumer preference. Catfishes have great commercial importance. Magur (Clarias batrachus) and Singhi (Heteropneustes fossilis) are the two air-breathing candidate species for culture. Several other non-air breathing catfishes like Mystus seenghala, Pungasiuspungasius, Wallago attu, Ompak padma are also being cultured in view of the high consumer preference. The giant freshwater prawn, (Macrobrachium rosenbergii) is the largest and fastest growing species among freshwater prawns. The development of hatchery technology for M. rosenbergii and later, for Indian river prawn, M. malcolmsonii has opened up new possibilities freshwater aquaculture. Integrated fish farming is the combination of two or more separate farming systems where the waste from one subsystem is utilized for sustenance of the other. For example, fish-pig/poultry/ducks farming. The system provides considerable potential and scope for augmenting production and also offers an enormous scope for employment generation and rural economy. The country possesses significant water bodies both in Himalayan region and Western Ghats, which hold large populations of both indigenous and exotic cultivable and non-cultivable cold water fish species. Important food fishes in the region are Mahaseers and Schizothoracids among the indigenous species and Trouts among the exotic varieties. Increasing per capita fish availability from the present level of only 8 kg to 11 kg (as recommended by WHO) is the primary challenge before the country. Considering the scope of the capture fisheries from coastal waters and natural inland waters like rivers and estuaries, emphasis on aquaculture and culture based fisheries from reservoirs and floodplain wetlands should also be given to meet the targeted fish requirement.

(The writer is Sr. Scientist & Head of KVK, Reasi, SKUAST-J).

Nanotechnology Pollution: Health Hazards and Remedies

■ DR. RAJKUMAR SINGH

Nano pollution impacts environment and human health caused by nanoparticles, which are extremely small particles and can easily penetrate biological cells due to their size. These particles are used in a wide range of products, including construction materials, cosmetics, and sunscreens, leading to their release into the air, water, and soil. One of the concerns with nanoparticles is their release during the handling of dry powders, even in controlled environments like fume hoods, and during construction activities. For instance, nanoparticles in concrete can be released into the environment during demolition or normal weathering processes. Sunscreens can release significant amounts of titanium dioxide nanoparticles into water bodies, which can undergo transformation in acidic soils, potentially leading to harmful effects on aquatic life. Other nanoparticles, such as copper and zinc oxide, can also enter aquatic systems and act as chemosensitizers, posing risks to marine organisms. Recently, a study has highlighted the unintentional release of nano plastics into the atmosphere through common activities such as the cured-in-place pipe repair method used in urban infrastructure maintenance. This process can significantly contribute to the presence of nano plastics in the air, posing risks to human health and the environment. The rapid development of nanotechnologies, coupled with the lack of specific regulations, has raised concerns about the severe environmental effects and unknown human health risks associated with nanoparticles. Even today, the toxic effects of direct or indirect exposure to nanoparticles, remains a pressing need for more research to understand the true extent of nano pollution's impact on the environment and human health. It requires a better understanding of the sources, pathways, and effects of nanoparticles on different environmental compartments and organisms with methods to control and mitigate the release of nanoparticles into the environment to protect both ecological and human health.

Causes of nano pollution

Nano pollution is caused by the widespread use and disposal of nanomaterials, which are materials made up of particles that are between 1 to 100 nanometres in size. These particles can come from a variety of sources and enter the environment through different pathways: a. Industrial Processes: The production, use, and disposal of nanomaterials in various industries can lead to their release into the environment. For example, manufacturing processes that involve nanomaterials, such as electronics, textiles, and pharmaceuticals, can emit nanoparticles into the air, water, and soil. b. Consumer Products: Nanoparticles are used in a wide range of consumer products, including cosmetics, sunscreens, paints, and food packaging. These particles can be released into the environment when the products are used, washed off, or disposed of. c. Construction and Demolition: Nanoparticles used in construction materials, such as concrete or coatings, can be released into the environment during the construction, demolition, or weathering of buildings. Normal abrasion and the demolition process can release nanoparticles into the air and surrounding environment. d. Waste Management and Recycling: The disposal and recycling of products containing nanomaterials can lead to the release of nanoparticles into landfills and wastewater treatment systems, from where they can reach into the soil and water bodies. e. Agricultural Runoff: Nanoparticles used in agricultural products, such as pesticides and fertilizers, can enter water bodies through runoff, potentially affecting aquatic ecosystems. f. Atmospheric Deposition: Nanoparticles can become airborne from various sources, including industrial emissions and the wear and tear of products containing nanomaterials. Once in the air, they can be transported over long distances and deposited in different environmental compartments. The unique properties of nanoparticles, such as their small size, high surface area, and reactivity, make them potentially more hazardous than larger particles of the same materials. However, the environmental and

health impacts of nano pollution are still not fully understood, and more research is needed to assess the risks and develop strategies for mitigation and control.

Remedies of pollution

The background of nano pollution is intricately linked to the broader context of plastic pollution, particularly from microplastics and nano plastics. A significant portion of marine plastic debris originates from land sources due to industrial and domestic waste, which finds its way into water bodies and ultimately the sea. Microplastics can come from various land-based sources, including agricultural materials, wastewater treatment plants, and synthetic fibers from clothing. These particles can persist in the environment for over a century, especially in soils, due to low light and oxygen conditions. At large, plastic pollution requires a holistic approach that spans the entire life cycle of plastics, from design and production to consumption and disposal, alongside international cooperation and effective waste management strategies. Nanotechnology offers innovative solutions for pollution control and environmental clean-up, such as efficient filtration systems, pollution-absorbing materials, and sensors for monitoring pollutants. It enables the development of more effective and less energy-intensive methods to reduce pollution and remediate contaminated environment. On the other hand, nanotechnology involves developing strategies for the prevention, control, and clean-up of nanoparticles in the environment. These strategies may include enhancing filtration and treatment techniques in wastewater management to capture nanoparticles, promoting the development and use of biodegradable or less harmful nanomaterials, implementing stricter regulations and guidelines for the production and disposal of nanomaterials, and increasing public awareness and education on the responsible use and disposal of products containing nanoparticles.

(The author is a youth motivator and former Head of the University Department of Political Science, B.N. Mandal University, Madhepura).

Balancing LGBTQ+ Rights and Religious Freedom

■ M BHAT

Introduction

For those unfamiliar with the acronym, LGBTQ+ encompasses a diverse spectrum of sexual orientations and gender identities, including lesbian, gay, bisexual, transgender, queer or questioning, intersex, asexual, and more. This acronym reflects the rich diversity within the LGBTQ+ community, highlighting its complexity and inclusivity. In the human rights and freedom arena, LGBTQ+ rights and religious freedom represent a complex issue. This dynamic field is marked by the challenges of ensuring that the rights of LGBTQ+ individuals are protected against discrimination while simultaneously respecting the freedom of individuals to practice their religious beliefs. This haunting issue deeply affects the lives of countless individuals across the globe. As societies evolve and become more inclusive, these fundamental human rights and religious convictions become increasingly complex. It is crucial to explore the various facets of this delicate issue, emphasizing the importance of dialogue, comprehension, and ultimately, finding a balance that respects both the dignity of LGBTQ+ individuals and the convictions of religious adherents.

Freedom of Religion vs. LGBTQ+ Rights

The intersection of religious freedom and LGBTQ+ rights sparked intense legal and social debates globally. These debates have been unfolding over recent years, with significant cases and controversies arising in educational institutions and legal systems, particularly in the United States. The clash between religious freedom and LGBTQ+ rights has led to high-profile judicial battles. The fundamental right to freedom of religion, enshrined in international human rights law, sets the framework for these

discussions. As religious practices extend into the public domain, conflicts often arise with the rights of others, particularly LGBTQ+ individuals. This clash has prompted profound considerations on where the boundaries should lie. Legal systems worldwide are grappling with the complex task of determining when and to what extent religious freedoms should be restricted to safeguard the rights and liberties of the LGBTQ+ community. At the core of this discourse is a pivotal question: Can a society uphold religious freedom without allowing it to serve as a means for discrimination against marginalized groups, including the LGBTQ+ community?

Religious Freedom and Human Rights Advocacy

The core of human rights advocacy centres on the fundamental principle of equality, emphasizing the critical need to prevent discrimination based on factors such as sexual orientation and gender identity. At the same time, protecting religious freedom is a vital component of this advocacy framework. The intricate challenge lies in striking a delicate balance that upholds human rights, including non-discrimination and equality, while also respecting the authentic expression of religious beliefs. This equilibrium is essential for fostering a society that cherishes diversity, upholds individual dignity, and embraces all individuals regardless of their sexual orientation or religious beliefs.

Tackling Tensions Between Religious Freedom and Equality

The tension between claims of religious freedom and the rights of LGBTQ+ individuals, particularly in scenarios involving civil servants and public service provision, highlights a complex interplay between personal beliefs and pub-

lic responsibilities. Instances where individuals, citing religious convictions, refuse to fulfil obligations that would support LGBTQ+ individuals, such as issuing marriage licenses to same-sex couples, bring to the forefront the delicate balance between personal convictions and professional duties.

These situations prompt a broader discussion on how societies can navigate and resolve such conflicts to ensure that public services are accessible to all community members, irrespective of the personal beliefs held by the service provider. It raises fundamental questions about the boundaries of religious freedom, the protection of LGBTQ+ rights, and the role of the state in mediating these conflicting interests.

The convergence of religious freedom and LGBTQ+ rights presents policymakers and legal systems with substantial challenges in safeguarding both sets of rights without undermining either. Achieving a balance between these conflicting values demands a nuanced approach that upholds individual freedoms, prevents discrimination, and guarantees equitable access to essential services for all members of society.

Supreme Court Case on Same-Sex Marriage in India

The landmark case in India, where eighteen same-sex couples are advocating for the legalization of same-sex marriage before the Supreme Court, encapsulates the ongoing global struggle for LGBTQ+ rights amidst the backdrop of religious and societal norms. This case symbolizes a significant legal battle aimed at securing recognition and equality for LGBTQ+ individuals, challenging deeply ingrained cultural and religious convictions.

The legal fight for same-sex marriage in India

mirrors a broader societal conflict between advancing principles of equality and the traditional perspectives on marriage and family. It underscores the clash between evolving norms that promote inclusivity and the entrenched beliefs that shape societal structures.

This case emphasizes the critical necessity for legal frameworks that can navigate the delicate balance between respecting religious beliefs and safeguarding the fundamental rights of LGBTQ+ individuals. It highlights the complexities inherent in reconciling divergent viewpoints within a diverse society, calling for nuanced approaches that uphold both religious freedoms and LGBTQ+ rights.

Conclusion

The delicate balance between upholding religious freedom and protecting the rights and dignity of LGBTQ+ individuals is a central challenge in fostering a more inclusive society. We shed light on different dimensions of this intricate issue and highlighted the significance of fostering dialogue, promoting understanding, and establishing legal and social frameworks that can accommodate the diverse spectrum of human experiences.

By challenging harmful norms, enacting inclusive legislation, and fostering mutual understanding, societies can progress towards a future where both religious freedom and LGBTQ+ rights are acknowledged and safeguarded. This journey necessitates empathy, respect, and a dedication to seeking common ground in the pursuit of justice and equality for all. It is through these concerted efforts that societies can navigate the complexities of this issue and strive towards a more harmonious coexistence where the rights and dignity of all individuals are upheld.

