VIRAM

AGENDA SUSTAINABILITY

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PREFACE

The world is at a critical juncture, where the impacts of a rapidly growing population are becoming increasingly evident in the form of climate change, deforestation, agricultural challenges, water and air pollution, and escalating poverty levels. The need for a concerted effort to stabilize the global population to a sustainable level has never been more urgent. In this context, the **VIRAM - Agenda Sustainability Campaign**, spearheaded by the **Mobius Foundation**, sought to raise awareness about the profound impacts of population growth on the environment and the economy, particularly in India.

This report delves into the campaign's objectives, its outreach strategies, and the measurable impact it achieved in addressing the nexus between population dynamics and environmental sustainability-related issues. The campaign's focus was not only on informing the general public but also on educating key stakeholders—policy and decision-makers, environmental experts, youth, changemakers, and celebrities—about the importance of family planning, conscious consumerism, and the collective responsibility of ensuring sustainable development.

The **VIRAM Campaign** was designed to resonate with a broad audience across India. It was delivered in both Hindi and English to maximize its reach and inclusivity. The 12-episode series on AajTak and India Today, coupled with radio programming was broadcast for the whole year, attracted a massive audience of over **40 million viewers and listeners**, with additional engagement from **40 million viewers on YouTube** and **275,885 people interacting on social media platforms.** The multi-channel approach allowed the campaign to create a significant impact across diverse demographics.

By bringing together experts from the fields of environmental sustainability and population dynamics, along with influential youth voices and public figures, the campaign highlighted the critical role of education in stabilizing population growth. It emphasized that education, particularly in family planning and sustainable consumption, is the key to empowering individuals and communities to make informed decisions that benefit both their lives and the planet.

Through the VIRAM campaign, the **Mobius Foundation** aimed to stimulate a national conversation about the importance of family planning and sustainable living, urging India to act proactively in managing its population growth and environmental impact along with sustainable development. This report provides an in-depth overview of the campaign's impact and underscores the importance of continued efforts toward achieving population stabilization for a sustainable future.

INDEX

VIRAM
EXECUTIVE SUMMARY

The Need for a Pause - The Need for VIRAM

VIRAM: Agenda Sustainability

Population Stabilisation Campaign

Population stabilization is vital for ensuring sustainable development, combating climate change and conserving biodiversity and natural resources. Growing populations escalate demands for food, water, energy, and land, intensifying emissions and degradation. Limiting population growth can alleviate pressures on the environment by reducing resource over exploitation, energy consumption, and industrial activity, thereby mitigating greenhouse gas emissions. It also curbs deforestation and habitat loss driven by agriculture and urbanization, helping to preserve ecosystems and biodiversity. Smaller families typically benefit from improved access to education, healthcare, and economic opportunities, which naturally lowers fertility rates.

However, discussions on population control must carefully consider ethical, cultural, and human rights issues. The Mobius Foundation, in partnership with TV Today Network, launched a one-yearlong social cause campaign called VIRAM: Agenda Sustainability.

The project focused on creating mass awareness about the impact of overpopulation on climate change, pollution, human health, habitat loss, and the over consumption of finite natural resources, such as fresh water, arable land, and fossil fuels. Each month, one of the twelve episodes addressing various environmental problems caused by excessive population growth was broadcast. The episodes can also be found on the YouTube channels of Lallantop, UP Tak, Bihar Tak, and the Mobius Foundation.

KEY METRICS

40,189,744
Audience Reached Through TV

40,181,514
Video Views on YouTube

2,75,885
Social Media Engagement (Likes, Comments & Shares)

33,40,127
Social Media Campaign Reach

400
Radio Playouts Delhi, Mumbai, Kolkata

501
Television Playouts

Key Speakers and Contributions

- **Mr. Pradip Burman (Chairman, Mobius Foundation):** Addressed the interplay between population size and consumption patterns, noting that high consumption in both developed and emerging economies is unsustainable.
- **Mr. Praveen Garg (President, Mobius Foundation):** Advocated for urgent policy reforms in education and job creation to address urban unemployment caused by rural-to-urban migration.
- **Dr. Ram Boojh (Advisor, Mobius Foundation):** Highlighted the skill gap among rural migrants, emphasized the need for vocational training programs to integrate them into the formal economy, commented on the loss of biodiversity as a socio-economic and health crisis, and emphasized the threat to fragile ecosystems in mountainous regions.
- **Dr. Vibha Dhawan (Director General, TERI):** Stated that the effects of climate change are starkly evident through extreme weather patterns globally, compounded by unsustainable development practices.
- **Mr. Bhagwan Keshbhat (Environmentalist):** Noted Mumbai's existential threat due to rising sea levels exacerbated by climate change.
- **Mr. Leo Saldanha (Environmentalist):** Spoke about how rapid urbanization in Indian cities has led to severe environmental degradation, including the destruction of lakes and natural water bodies.
- **Mr. Akash Ranison (Environmentalist, Co-founder and Director, Greener Earth Foundation):** Stressed the importance of education reform and family planning awareness to mitigate the impact of automation on job markets.

Sessions and Workshops: Each episode featured panel discussions on specific topics, such as the interplay between population growth, climate change, unemployment, poverty etc These sessions provided a platform for in-depth discussions and the exchange of ideas among experts.

Select Voices from the Campaign

Chief Guest:
Dr. Sudhanshu Trivedi
Member, Rajya Sabha

Mr. G. V. L.
Narasimha Rao
Member, Rajya Sabha

Hon.
Mr. Bhupendra Yadav
Union Minister of Labour and Employment, Environment, Forest and Climate Change

Mr. Ashwini Kumar Choubey
Hon. Minister of State for Consumer Affairs, Food and Public Distribution

Dr. Kumar Vishwas
Hindi Poet, Speaker and Socio-political Activist

Mr. Kiran Karnik
Padama Shri Awardee and Former President of National Association of Software and Service Companies (NASSCOM)

Mr. Nekram Sharma
Farmer and Padma Shri Awardee

Mr. Nitish Bhardwaj
Actor,
Director and Writer

Mr. Siddharth Kak
Indian Documentary Filmmaker, Television Producer, and Presenter, (Best known as the Producer and Presenter of Surabhi)

Ms. Poonam Muttreja
Executive Director, Population Foundation of India

Mr. Zakir Khan
Standup Comedian

Mr. Afroz Shah
Environmentalist

Mr. Akash Ranison
Environmentalist, Co-founder and Director, Greener Earth Foundation

Mr. Arun Krishnamurthy
Founder, Environmentalist Foundation of India

Campaign Partners

Major Takeaways

1. **Overpopulation as a Root Cause:** Overpopulation is identified as a root cause of unemployment, poverty, environmental degradation, and resource scarcity. Addressing population issue is essential for achieving sustainable development goals.
2. **Urbanization Challenges:** Rapid urbanization driven by migration increases pressure on cities' infrastructure and services. Properly planned settlements can mitigate these challenges while harnessing opportunities from migration.
3. **Education & Skill Development:** Education is critical for equipping the workforce with relevant skills to meet modern job demands. This includes vocational training programs tailored for rural migrants.
4. **Environmental Sustainability Must Be Prioritized:** Sustainable development requires balancing economic growth with environmental conservation through renewable energy adoption, green infrastructure development, and climate adaptation strategies.
5. **Collaboration is Essential:** Cross-sector collaboration among governments, NGOs, private sectors, and international organizations is necessary to address interconnected challenges like migration management, climate change adaptation, and socio-economic inequalities.
6. **Role of Family Planning:** Family planning initiatives can help stabilize population growth while improving access to healthcare and education for women in underserved communities.
7. **Water Security as a Key Focus Area:** Efficient water management solutions are critical for addressing water scarcity caused by overpopulation and climate change.

Key Findings

- Overpopulation exacerbates climate change, resource depletion, unemployment, poverty, and environmental degradation.
- Urban centers are increasingly burdened by migration-driven overcrowding and environmental degradation.
- Unsustainable consumption patterns and unplanned urbanization contribute significantly to climate change.
- A lack of quality education perpetuates poverty cycles and limits opportunities for sustainable development.
- Environmental sustainability and climate resilience must be prioritized alongside economic growth.

Action Items

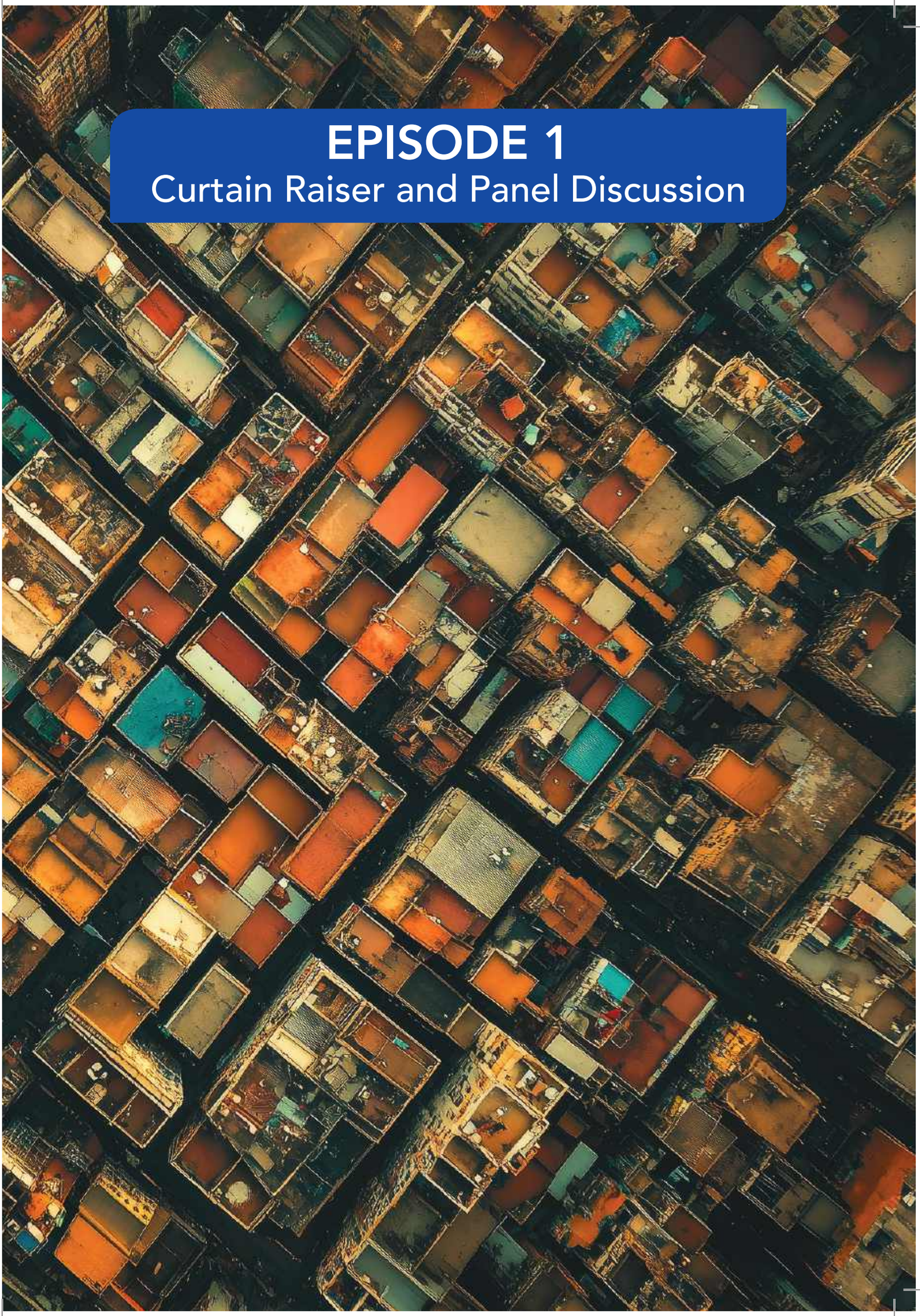
- Implement nationwide family planning initiatives to manage population growth.
- Promote education strategiesto improve access to quality learning, particularly for women.
- Enhance vocational and skill training programs tailored for rural migrants to address the skill gap.
- Promote sustainable consumption practices to reduce environmental strain.

- Develop policies addressing automation's impact on job markets and supporting worker retraining.
- Adopt renewable energy sources and enhance energy efficiency across all sectors.
- Incorporate green infrastructure and promote sustainable urban development to mitigate climate change.
- Enforce stringent environmental regulations and promote community engagement in sustainable development practices.

Outcome and Impact

The VIRAM campaign emphasized the need for comprehensive policies that incorporate demographic considerations into environmental strategies. Cross-sector collaboration is essential to address interconnected issues such as poverty, education, healthcare access, population management, and environmental sustainability. Integrating green infrastructure and promoting sustainable urban development is vital to mitigate the repercussions of population growth on climate change.

VIRAM campaign focused on specific sectoral policy recommendations and implementation strategies for sustainable development in India. The scope of the campaign included collaborative solutions and systemic challenges involving urban expansion.



EPISODE 1

Curtain Raiser and Panel Discussion

Episode 1 :
Curtain Raiser and Panel Discussion

Episode Synopsis

The world recently reached a population milestone of 8 billion, raising concerns about the irreversible impact on the environment, natural resources, and future generations. This milestone coincides with India overtaking China as the world's most populous nation. As per the United Nations Population Fund's World Population Dashboard, as of 2024[1], India's population stands at 1.44 billion whereas China's is at 1.43; a development that underscores the urgency of addressing population growth in the context of sustainability. While efforts are underway globally to promote sustainable population growth, there remains a significant journey ahead, particularly for countries like India, where rapid population expansion poses unique challenges to resource management and environmental preservation.

In response to these pressing issues, the Mobius Foundation, in collaboration with the India Today Group, launched the VIRAM: Agenda Sustainability campaign to foster dialogue and awareness on population stabilisation as a critical component of sustainability. The launch event brought together policymakers, environmentalists, academics, and NGOs to discuss remedial measures for population control and its far-reaching implications.

The event highlighted the need for innovative solutions and collaborative efforts to address the dual challenges of population growth and environmental sustainability. With India now home to over 1.4 billion people, the discussions emphasised the importance of integrating population stabilisation strategies with broader sustainability goals. Initiatives such as Mobius Foundation's 'Project Aakar' were showcased as examples of actionable steps toward achieving a balanced population trajectory. The conclave also underscored the role of education, awareness, and policy interventions in empowering communities to adopt sustainable practices. As India navigates its demographic transition, the VIRAM: Agenda Sustainability campaign serves as a timely and vital platform to drive meaningful change and ensure a sustainable future for generations to come.

1. United Nations Population Fund - World Population Dashboard

Problem Statement

Population growth is a major driver of environmental sustainability, as it places increasing pressure on natural resources and ecosystems. With more people comes a higher demand for essential resources such as water, food, and energy, often leading to resource depletion as supply struggles to keep pace. This overconsumption accelerates deforestation, land degradation, and habitat loss, threatening biodiversity and disrupting vital ecosystems. Additionally, the expansion of human settlements generates more waste and pollution, overwhelming waste management systems and contaminating land, air, and water. As the demand for energy grows, so does the reliance on fossil fuels, contributing to rising greenhouse gas emissions and climate change. The cumulative effect of these challenges—driven by a growing population—further undermines environmental sustainability, making it increasingly difficult to maintain a healthy, balanced planet.

In addition to environmental concerns, high population growth rates pose economic and social challenges. Overcrowded urban areas struggle with inadequate housing, poor sanitation, and overburdened public infrastructure, leading to declining quality of life. Education and healthcare systems in many rapidly growing regions are stretched thin, limiting access to quality services and perpetuating cycles of poverty. Economic opportunities become constrained as labour markets struggle to absorb a growing workforce, increasing unemployment rates and income inequality.

India's population continues to rise due to a combination of socio-economic, cultural, and policy factors. Despite national efforts to reduce birth rates, rural areas, particularly in poorer regions, still experience higher fertility rates due to limited access to education, healthcare, and family planning services. In these communities, large families are often viewed as an economic asset, providing labour for agriculture and family-based enterprises. Additionally, access to contraceptives and reproductive health services remains inadequate in some areas, while cultural preferences for larger families, especially for sons, persist. Early marriage and childbearing are common in certain regions, extending the reproductive period for women and leading to higher birth rates. Furthermore, economic insecurity in rural areas encourages larger families, as children are seen as economic contributors.

While India's infant mortality rate has decreased, it remains relatively high, leading some families to have more children to offset the risk of infant loss. Government and policy challenges, including inconsistent implementation of family planning programs across states, have also contributed to the rising population. Moreover, although urbanization is increasing, a large portion of the population still resides in rural areas, where access to education, healthcare, and family planning is limited. Addressing these challenges requires comprehensive policies that improve education, healthcare, economic opportunities, and promote

gender equality, empowering individuals to make informed decisions about family size.

Moreover, policy frameworks must integrate sustainable population strategies with economic and environmental planning to ensure balanced growth and resource management.

Addressing the challenges posed by rapid population growth requires a multifaceted approach that combines policy innovation, technological advancement, and community engagement. By implementing strategic interventions in education, healthcare, and governance, societies can work towards a sustainable future where economic opportunities, environmental conservation, and social equity are aligned to support future generations.

Fire Side Chat - Mr. Pradip Burman, Chairman Mobius Foundation with Ms. Akshita Nandagopal, Anchor, India Today TV

The VIRAM Agenda Sustainability Launch Conclave featured an insightful Fire Side Chat with Mr. Pradip Burman, Chairman of the Mobius Foundation, in conversation with Ms. Akshita Nandagopal, Anchor at India Today TV. The session provided a deep dive into critical topics such as sustainability, population stabilisation, and environmental conservation, highlighting the urgent need for collective action. Mr. Burman shared his visionary insights on the Mobius Foundation's initiatives, including Project Akar, while Ms. Nandagopal skillfully steered the discussion, drawing out actionable strategies and policy interventions. The engaging dialogue underscored the importance of integrating sustainability principles into education, governance, and public awareness efforts, leaving the audience with a clear call to action for a more sustainable and balanced future.

Key Insights

L-R: Ms. Akshita Nandagopal and Mr. Pradip Burman

Ms. Akshita Nandagopal (AN): How do you see a campaign like Agenda Sustainability making an impact?

Mr. Pradip Burman (PB): One of the primary reasons for the pressing socio-economic and environmental challenges we face today is overpopulation. At the time of India's independence in 1947, the country's population stood at approximately 35 crores (350 million). In the past seven decades, this number has quadrupled, reaching a staggering 140 crores (1.4 billion) today. While the population has increased exponentially, the geographical area of the country has remained constant. Natural resources, including freshwater supplies, have not expanded to meet the growing demand. On the contrary, human encroachment has led to large-scale deforestation, reducing green cover and further straining the ecological balance. This rapid population growth has placed immense pressure on essential resources such as water, food, and housing, making population stabilisation one of the most critical issues that require urgent attention.

The Mobius Foundation, an organisation dedicated to sustainability, recognises that addressing every aspect of environmental and social sustainability is an enormous challenge. Hence, the foundation has chosen to focus on two key areas: population stabilisation and education. These two domains are intricately linked, as education—especially for women—plays a crucial role in lowering fertility rates and promoting responsible family planning.

Awareness and education play a pivotal role in addressing overpopulation and achieving sustainable development. Public awareness campaigns like VIRAM are essential to highlight the challenges posed by rapid population growth and to promote responsible behaviour. Equally important is education, particularly in areas such as family planning and resource management, which empowers individuals and communities to make informed decisions. By focusing on these key areas, we can work towards stabilizing population growth and ensuring a more sustainable future.

AN: Mr. Burman, could you please throw some light for our audience on the initiatives that the Mobius Foundation has taken in the field particularly of population stabilization?

PB: To contribute to population stabilization, the Mobius Foundation launched Project Aakar—an initiative aimed at shaping sustainable family structures in India. The term "Aakar" signifies the structure or shape of families, emphasising the importance of balanced population growth. The Foundation is focusing on its interventions based on Total Fertility Rate (TFR) which represents the average number of children born to a woman during her lifetime. A TFR exceeding 2.1 indicates sustainable population growth, while a rate above 3.0 signifies a significantly high birth rate, leading to unsustainable population expansion.

Through extensive research, it was identified that more than 140 districts in India have a TFR exceeding 3.0. Recognising the urgency of the situation, the Mobius Foundation has piloted projects in two high-TFR districts to assess the impact and effectiveness of the approach before scaling it up to a larger level. Once the model is refined and proven successful, the project will be expanded to over 100 high-TFR districts across the country.

The foundation's approach to population stabilization is multi-faceted, focusing on awareness campaigns, family planning initiatives, education on reproductive health, and community engagement programs.

The VIRAM – Agenda Sustainability campaign is strategically designed to drive meaningful change by creating widespread awareness, promoting responsible family planning, and embedding sustainability principles into education and governance systems. Beyond immediate goals, it seeks to achieve a lasting impact by educating key stakeholders and advocating for targeted policy interventions. This comprehensive approach ensures that the campaign not only addresses current challenges but also lays the foundation for a sustainable and balanced future.

Celebrity Interaction

L-R: Ms. Akshita Nandagopal, Mr. Sayeed Ansari, and Mr. Zakir Khan

In his trademark humorous style, Mr. Khan tackled the complex and often sensitive issue of population growth, drawing from his own personal experiences and observations. With wit and relatable anecdotes, he highlighted how cultural traditions, poverty, and lack of education contribute to the persistence of large families in many communities. Reflecting on his extensive travels and interactions with people from diverse backgrounds, he shared how deeply ingrained beliefs—such as the preference for sons and the assumption that more children lead to greater financial security—continue to shape family planning decisions. His engaging approach made the discussion not just insightful but also accessible, encouraging reflection on an issue that affects the future of communities and nations alike.

Key Insights

- **Correlation Between Education and Poverty with Population Growth** – Education and poverty are two major factors influencing population growth. Poor families tend to have more children, hoping they will improve the family's financial situation.
- **Traditional Mindset and Lack of Awareness** – Many families continue to have large numbers of children due to inherited cultural norms. Generations before them had many children, so they follow the same pattern without considering alternative ways of living.
- **Changing Attitudes Towards Family Size** – While previous generations considered large families essential, modern families, especially among the educated, are becoming more comfortable with having only one or two children, including just daughters.
- **Cultural Beliefs About Sons and Savings** – Traditional beliefs, particularly in regions like Rajasthan, suggest that having a son ensures financial security. This mindset affects family planning, as people believe their sons will either take care of them or render savings unnecessary.
- **Impact of Stability and Peace on Population Trends** – Historically, wars

and conflicts influenced population dynamics. However, in relatively peaceful times, these pressures are easing, and attitudes toward population growth are gradually shifting.

- **Mr. Zakir Khan, Standup Comedian** spoke about the strong correlation between poverty and education. In many regions, particularly those with limited access to quality education, population growth remains high. This is largely because economic hardship often compels families to view children as potential contributors to household income. Parents in lower-income communities frequently believe that having more children increases their chances of financial stability, as they anticipate that at least some of their offspring will grow up to support the family.

  Conversely, education plays a crucial role in shaping perspectives on family planning and quality of life. When individuals are aware of better living standards, healthcare facilities, and career opportunities, they begin to understand the advantages of smaller, well-managed families. However, in societies where traditional customs and generational patterns dominate, the cycle of large families persists. For instance, if previous generations had multiple children—perhaps seven or eight siblings in a single household—the next generation often continues the trend, believing it to be the norm.

  Cultural beliefs significantly influence reproductive choices. In regions with patriarchal traditions, sayings and proverbs emphasise the value of having sons, often linking them to financial security and family legacy. In some cases, the idea that a son will carry forward the family name and provide for aging parents is deeply ingrained, discouraging families from limiting the number of children they have. This preference for male heirs has historically shaped family structures, even leading to gender imbalances in certain societies.

  However, attitudes are gradually evolving. With increasing awareness, families are becoming more accepting of daughters as equal contributors to household stability. The shift is evident in modern urban centres, where families with only one or two children—often daughters—express contentment with their choices. What was once seen as unacceptable or unusual is now becoming more normalised.

  Another aspect to consider is the historical impact of war and instability. Throughout history, societies have viewed large families as a safeguard against the losses incurred during wars, ensuring that enough members survive to sustain future generations. In times of conflict, population growth was often seen as a necessity for rebuilding nations. However, in today's relatively peaceful world, this mindset is gradually changing. Economic stability and technological advancements have reduced the immediate need for large families, allowing for a more balanced approach to population growth.

  As societies progress, the need for strategic population management becomes increasingly evident. The

transition from an era of survival-driven reproduction to one where education, healthcare, and economic empowerment dictate family planning is a significant shift. Addressing overpopulation requires not only policy interventions but also a deeper understanding of the social and cultural dynamics that drive population growth. By integrating education and economic opportunities with culturally sensitive awareness campaigns, sustainable population management can become a reality.

Panel Discussion I

Theme: Overpopulation: Everything Connects

Understanding the causes and effects of overpopulation, its impact on human resources, possible long and short-term remedial measures

MAIN DISCUSSION POINTS

1. Population Growth and Policy Response

- The debate on whether population itself is a problem or if the issue is uncontrolled population explosion.
- The Indian government's recognition of population control as a key challenge.
- Achievement of replacement-level fertility rate (TFR of 2.1) in India ahead of expectations.

2. Socioeconomic Factors Influencing Population Trends

- Families historically had more children due to economic insecurity and reliance on additional labour.
- Infant mortality rate reduction has contributed to declining birth rates.

L-R: Ms. Akshita Nandagopal, Mr. C. K. Mishra, Mr. Anand Sinha, Mr. Praveen Garg, and Mr. Srinivas Goli

- Focus on adolescent and maternal health and adolescent girls' education is essential for long-term population stabilisation.
- Women empowerment is central to reducing birth rates, especially with regards to girl child education and increasing women's decision-making power.

3. Family Planning and Ethical Considerations

- Family planning should prioritise reproductive rights over arbitrary population targets.
- Providing access to quality healthcare and contraceptive options ensures natural population stabilisation.
- India's Family Planning programs have been recognised globally for their success.

4. Strategies for Population Management

- Education: Improving education quality, especially for girls, is crucial.
- Women's Empowerment: Increasing women's participation in the workforce and decision-making.
- Employment Opportunities: Economic growth and job creation can further reduce birth rates.
- Technological Advancements: Using data and technology for reproductive health tracking and service delivery.
- Political and Bureaucratic Leadership: Strong governance is needed to shape public awareness and policies.

5. Environmental and Resource Constraints

- India has 1.4% of global land area but supports 14% of the world's population.
- Overpopulation strains natural resources, contributing to poverty and environmental degradation.

Mr. C. K. Mishra, Former Secretary, MoEFFC opined that the discourse surrounding overpopulation often frames it as an impending crisis. Contrary to earlier predictions of unchecked population explosion, India has surprisingly reached replacement-level fertility ahead of expectations. The Total Fertility Rate (TFR), which represents the average number of children born per woman, has declined to 2.0—below the replacement level of 2.1. This milestone indicates that India is now on a trajectory of population stabilisation, marking a significant demographic shift.

Several socio-economic and policy-driven factors have contributed to this decline in fertility rates, and analysing them provides insights into how sustainable population control can be achieved without coercion.

1. Economic and Social Security: Reducing the Perceived Need for Larger Families

In many parts of India, particularly in rural areas, large families were traditionally seen as a necessity and children were considered economic assets—However, economic empowerment, job security, and poverty alleviation programs play a crucial role in reducing the reliance

on large families for economic sustenance.

2. Decline in Infant Mortality: Strengthening Parental Confidence

Historically, high infant mortality rates led parents to have more children, fearing that some might not survive. This uncertainty often resulted in larger families. However, improvements in healthcare, vaccination programs, and maternal health services have significantly reduced infant and child mortality rates in India

3. Empowering Adolescent Girls: The Future of Population Stabilisation

A major demographic segment influencing population trends is adolescents, particularly adolescent girls who are future mothers. Recognising this, government and non-government organisations have increasingly focused on nutrition, health, and educational initiatives targeted at adolescent girls.

4. The Role of Female Education in Population Control

Education is arguably the most powerful tool in controlling population growth. Studies have consistently shown that higher levels of education—especially among girls—lead to lower fertility rates, delayed marriage, and greater awareness of family planning options. Ensuring that every girl completes at least Class 12 has a transformative effect on population stabilisation.

5. Shifting Decision-Making Power to Women

Traditional family structures often placed reproductive decisions in the hands of men.. When women are empowered to make choices about their reproductive health, supported by education and access to contraception, fertility rates naturally decline.

Mr. Srinivas Goli, Professor, International Institute for Population Sciences addressed a common perception in global demographic discussions - that Asia, particularly India and China, has been the primary driver of population growth. However, a closer examination of historical data reveals a different and more nuanced reality—Asia's share of the global population has remained relatively stable, increasing only marginally over the last several decades.

In 1950, Asia accounted for 55% of the world's population. Today, despite rapid economic and infrastructural development, this share has risen to just 59%. Over a span of more than 70 years, the net increase in Asia's contribution to global population is only around 4%, indicating that Asia has actually experienced a significant decline in its population growth rate relative to historical trends.

A key factor in understanding Asia's demographic shift is the fertility transition—the process by which societies move from high birth and death rates to lower levels of fertility and mortality, ultimately stabilising population growth. When comparing this transition across regions, Asia has accomplished in just a few decades what took centuries in developed Western nations.

- France took 225 years to transition from high fertility levels to replacement-level fertility.
- The United Kingdom took 215 years to undergo the same demographic transformation.
- The United States took 140 years to reach replacement-level fertility.
- China completed the transition in just 29 years, largely due to strict family planning policies.
- India, starting its fertility transition in 1975, achieved replacement-level fertility in 2022—completing the process in just 46 years.

This rapid demographic shift in India is particularly notable because it was achieved without the coercive measures that some other nations employed. Instead, India's population stabilisation was driven by a combination of improved healthcare, increased education (especially for women), economic development, and voluntary family planning measures.

Given this data, it is misleading for developed countries to attribute global population concerns primarily to Asia. The fact that Asia has undergone one of the fastest fertility declines in history suggests that blaming Asia for its population contribution ignores the region's significant demographic progress.

Instead, the conversation around global population challenges should shift from merely focusing on numbers to addressing sustainability, resource distribution, and economic equity. Many developed countries are now facing challenges such as aging populations and shrinking workforces, whereas many Asian countries are undergoing a demographic dividend phase, with a young and growing workforce contributing to economic growth.

Mr. Anand Sinha, Country Advisor, David and Lucile Packard Foundation said that over the last 10 to 15 years, India has demonstrated a significant shift in its approach to family planning. Rather than enforcing restrictive measures, the country has focused on voluntary, rights-based programs that empower individuals and couples to make informed reproductive choices. This evidence-based, ethical approach has yielded impressive results—with India's Total Fertility Rate (TFR) now at 2.0, marking a significant decline from 5.9 just a few decades ago.

A common argument in discussions around population control is the supposed direct link between population growth and climate change. The logic often suggests that reducing birth rates will automatically alleviate environmental pressures. However, the reality is more complex. If climate change were purely a function of population size, India—given its remarkable progress in stabilising fertility rates—should have seen corresponding improvements in environmental sustainability. Instead, climate challenges remain persistent and urgent, demonstrating that population stabilisation alone is not a silver bullet for ecological concerns.

That being said, population and climate are undoubtedly interconnected. Rapid demographic growth can place additional stress on water, food, and energy resources, but the solution does not lie in setting arbitrary numerical targets for population control. The foundation of an effective

family planning program must be rooted in individual choice, access to education, and healthcare—rather than an imposed demographic ideal.

India's approach to family planning has matured beyond coercion and demographic quotas to prioritise awareness, accessibility, and respect for individual rights. Organisations like the Mobius Foundation have played a crucial role in educating communities, promoting reproductive health, and ensuring that individuals—especially women—are equipped with the knowledge and resources to make their own decisions.

India's TFR has declined dramatically from 5.9 to 2.0, and only five states still have a TFR above the replacement level of 2.1. This is a clear testament to the success of policies focused on education, awareness, and access to healthcare. When people are provided with the right resources and knowledge, they naturally make decisions that align with sustainable population growth.

He also mentioned that a critical yet often overlooked dimension of family planning is gender inequality. India's Beti Bachao, Beti Padhao (Save the Girl Child, Educate the Girl Child) initiative aims to address declining sex ratios and promote gender equality. However, its underlying justification—ensuring there are enough women for men to marry—reveals a deeply ingrained societal bias.

This perspective reduces women to mere reproductive and domestic resources, reinforcing patriarchal structures rather than genuinely valuing women as individuals with rights, aspirations, and autonomy. The root issue is not just about saving the girl child but about transforming societal mindsets to recognise and respect women beyond their roles in marriage and motherhood.

Real change requires rethinking the motivations behind population and gender-related policies. Programs should:

- Address deep-seated gender biases rather than treating women as a demographic necessity
- Shift from slogans to real social transformation, ensuring women's rights are central to policies
- Prioritise education, economic opportunities, and healthcare to naturally influence fertility decisions

Mr. Praveen Garg, IAS (Rtd.), President - Mobius Foundation spoke on India's Family Planning program, stating that it has undergone a remarkable transformation. What began as a linear, demographic-focused initiative has evolved into a comprehensive family welfare strategy, prioritising choice, accessibility, and healthcare integration. This shift—from rigid numerical targets to a rights-based approach has significantly improved reproductive health outcomes and helped stabilise fertility rates.

The government has gradually recognised that reproductive decisions must be driven by individual choice, access to healthcare, and social empowerment rather than coercion. This realisation led to:

- The shift from a population control mindset to a family welfare approach, integrating reproductive health into broader maternal and child healthcare services.
- A target-free approach, where

numerical goals for sterilisation and contraceptive use were replaced with voluntary participation and informed choice.

- A diversified, "cafeteria approach", offering a range of contraceptive options and reproductive healthcare services tailored to individual needs.

These reforms have yielded significant results, with India's Total Fertility Rate (TFR) declining to 2.0, a clear sign that empowerment-based policies are effective in achieving population stabilisation.

Looking ahead, technology is poised to be a game-changer in accelerating the impact of India's family planning efforts. The integration of digital tools, artificial intelligence, and data-driven health services is expected to revolutionise reproductive healthcare in several key ways:

- Tracking Reproductive Age Groups – Digital health records and mobile applications will allow healthcare providers to monitor reproductive-age individuals and offer timely interventions.
- Improving Contraceptive Supply Chains – Technology can optimise the distribution and accessibility of contraceptives, ensuring that individuals have consistent access to family planning resources.
- Telemedicine and Digital Awareness Campaigns – Online counselling, mobile-based education programs, and AI-driven health assistants can empower individuals with knowledge about reproductive choices.
- Big Data for Policy Implementation – Governments can leverage demographic and health data analytics to design more efficient, targeted interventions that reach underserved populations.

By leveraging technology to enhance service delivery and accessibility, India can further accelerate fertility decline and ensure reproductive rights for all.

Despite these advancements, India continues to grapple with the consequences of overpopulation. With only 1.4% of the world's land area but 14% of its population, the country faces significant pressure on its natural resources, infrastructure, and economic stability. Key challenges include:

- Environmental Degradation – Deforestation, groundwater depletion, and air pollution are exacerbated by high population density.
- Economic Strain – India's per capita income remains low at approximately $2,000 USD, highlighting the need for sustainable economic growth and job creation.
- Poverty and Social Inequality – Overpopulation continues to strain public services, making it difficult to eliminate poverty, improve healthcare access, and ensure quality education for all.

While the government has implemented strong policies, the success of population stabilisation efforts ultimately depends on voluntary public participation. Without grassroots-level engagement, community awareness, and individual responsibility, the benefits of government initiatives may not be fully realised in time.

Panel Discussion II

बढ़ती आबादी, घटते संसाधनः सतत विकास की चुनौती

Understanding the impact of overpopulation on human resources, environment and the economic progress of the nation

MAIN DISCUSSION POINTS

1. Terminology and Perspective on Population Growth

- Experts argue against using the term "population explosion" as every child is valuable.
- Historical concerns (e.g., Malthusian theory) about overpopulation leading to famine have not materialised as predicted.

2. Women's Empowerment and Reproductive Rights

- Population stabilisation is closely linked to women's empowerment.
- Access to education, reproductive rights, and family planning are critical in enabling women to make informed choices about childbirth.
- India witnesses around 15 million abortions annually, often due to a lack of access to contraception and family planning.

3. Resource Utilisation and Economic Growth

- A larger population does not necessarily equate to resource depletion; proper planning and economic growth can mitigate challenges.
- Ensuring education, healthcare, and employment opportunities are key to managing population growth effectively.

4. Migration and Regional Disparities

- Migration is becoming a major demographic issue.

L-R: Mr. Sayeed Ansari, Dr. Ram Boojh, Ms. Poonam Muttreja, Mr. Amitabh Kundu, and Swami Prem Parivartan

- Population mobility is creating economic and social divides that need policy interventions.

5. Population Growth Projections and Global Trends

- Initial projections of India's population peaking at 1.75 billion by 2068 have been revised; stabilisation is now expected earlier.
- India's demographic growth rate is slowing, with future declines anticipated after 2050.
- Global discussions on climate change and sustainability rarely address population growth directly.

6. Environmental Impact of Population Growth

- Population growth directly affects biodiversity, climate change, and resource consumption.
- Calls for integrating population considerations into international climate and environmental negotiations.

7. Philosophical and Ecological Perspective

- Human life is brief in comparison to nature's long-term cycles.
- Emphasis on preserving the environment and recognising human dependence on nature rather than focusing solely on population figures.

Ms. Poonam Muttreja, Executive Director, Population Foundation of India said that the Malthusian theory, proposed over a century ago, predicted that unchecked population growth would lead to mass starvation and widespread famine due to insufficient food production. However, such catastrophic outcomes have not materialised. While population growth has undeniably put pressure on resources, advancements in agriculture, technology, and economic policies have helped sustain large populations without the predicted levels of mass starvation.

It is essential to shift the perspective on population growth from a crisis-driven "explosion" to a more nuanced discussion of stabilisation. Every child born is valuable, and the discussion should not focus on restricting births but rather on ensuring that every child has access to proper resources, education, and opportunities. Stabilisation efforts are necessary to balance population growth with available resources, but they should be pursued through informed policies rather than coercive measures.

Population stabilisation is closely linked to women's empowerment, particularly in terms of their reproductive rights and access to family planning. Many women, despite having legal rights, lack the autonomy to make decisions about their education, marriage, and family size due to societal and familial pressures. True empowerment comes when women have the freedom and resources to make informed choices about their reproductive health.

Currently, India sees approximately 15 million abortions annually, not necessarily due to teenage pregnancies but because of unintended fertility. A significant number of women resort to unsafe abortions due to the lack of access to family planning resources, leading to high maternal mortality rates. By improving access to

family planning services and reproductive healthcare, we can ensure that every child is wanted and that women's health and well-being are prioritised.

Empowering women through education and employment will also contribute to economic growth. Studies have shown that when women are educated and have access to family planning, they contribute more actively to the workforce, leading to greater economic prosperity.

It is also critical to address the disparity in resource consumption. While India has a vast population, it is not the sheer number of people that strains the environment, but rather the patterns of consumption. The wealthiest 10% of the global population—including affluent individuals in India—consume a disproportionate share of resources and contribute significantly to environmental degradation. The issue is not simply overpopulation but the failure of urban planning and equitable resource distribution.

One of the biggest challenges India faces is the lack of systematic urban and rural planning. Overcrowded cities, poor infrastructure, and environmental degradation result from unplanned expansion rather than merely a growing population. Countries like China, which initially focused on rapid urban expansion, are now facing the consequences of over-construction. India must learn from these mistakes and implement strategic urban planning that balances growth with sustainability.

Public awareness and community participation are crucial in addressing population-related challenges. Media plays a pivotal role in shaping public perception and driving meaningful change. By fostering informed discussions and promoting responsible policies, media platforms can help shift the narrative from population "explosion" to population "stabilisation" through informed, voluntary, and sustainable choices.

Mr. Amitabh Kundu, Member - Technical Group on Population Projections, National Commission on Population stated that addressing overpopulation requires a comprehensive understanding of multiple challenges and variables. It is not a simple issue with a straightforward solution but a multifaceted problem influenced by factors such as capacity, education, and access to healthcare. These basic determinants are crucial for the success of population control measures. However, there exist significant disparities in these areas, making effective intervention a major challenge. While efforts are being made to bridge these gaps, they have not been adequately addressed, highlighting the need for stronger policy frameworks and execution strategies.

One of the most pressing concerns in the coming decades will be migration. A distinct demographic shift is becoming evident in India, particularly with the increasing divide between the northern and southern states. Southern states, which have successfully implemented family planning and achieved lower fertility rates, are seeing slower population growth, whereas northern states continue to experience higher fertility rates and population expansion. This imbalance is likely to result in increased migration, with significant population mobility between these regions.

Surveys conducted in Kerala and Tamil Nadu already indicate that migration is a growing issue that must be systematically addressed. This internal demographic shift could lead to economic, social, and political challenges, requiring policymakers to devise strategies for equitable resource distribution, employment opportunities, and infrastructural development.

Despite a declining fertility rate projections indicate that India's population will continue to rise in the near future. Previous estimates suggested that India's population would peak at approximately 1.75 billion by 2068. However, revised projections from the World Population Prospects report now suggest that stabilisation may occur around 2061 at approximately 1.7 billion. Some researchers argue that even these revised estimates may still be slightly overestimated.

Given these trends, the primary focus should be on sustainable resource utilisation. Ensuring that marginalised communities have access to basic necessities is critical, and this requires a simultaneous increase in production and national income. The challenge is not merely controlling population growth but ensuring that economic growth keeps pace with demographic changes to maintain a high quality of life for all citizens.

The sharp decline in infant mortality rates and improvements in healthcare infrastructure have not been fully accounted for in some demographic models. Studies conducted by institutions such as the Centre for Development Studies (CDS) and various universities suggest that India's demographic progression is more nuanced than some global reports indicate.

While India is on track to experience significant population changes, the progress made in healthcare, family planning, and education should not be overlooked. The country's achievements in reducing fertility rates and improving life expectancy are noteworthy and indicate that, with the right policy interventions, India can manage its demographic challenges effectively.

Swami Prem Parivartan (Peepal Baba), Environmentalist, Give Me Trees Trust said that when one observes nature closely, a profound realisation emerges: human beings are but a small part of a vast, complex ecosystem. Standing in the heart of a dense forest and looking out at sprawling cities, or gazing from mountain peaks at villages and rivers below, it becomes clear how insignificant our species truly is in the grand scale of nature.

While discussions on overpopulation have led to the establishment of major institutions, extensive studies, and complex algorithms analysing demographic trends, the fundamental understanding that nature governs all life remains largely ignored. Population figures, data analytics, and statistical models dominate discussions, yet the essential truth remains unchanged—our lifespan averages merely 70 to 80 years. Within this limited time, we become engrossed in counting and analysing population numbers, while nature itself holds the ultimate authority over which species will survive and which will not.

Despite advancements in technology and development—including highways, cities, and digital innovations—humanity seems

to be missing a crucial point. The real governing force is not man-made structures or economic policies, but nature itself. The ecosystem operates on fundamental principles, where chlorophyll—the essence of plant life—is, in a way, the divine force sustaining all living beings. It is through the process of photosynthesis that plants produce oxygen, a resource upon which all human life depends.

Modern civilisation often overlooks this simple yet undeniable truth. The very air we breathe is a gift from nature, not from human ingenuity. As overpopulation continues to strain resources and disrupt ecological balance, there is an urgent need to realign development priorities with the natural order. Technological progress is essential, but it must not come at the cost of the environment. The survival of humanity depends not on its ability to control nature, but on its ability to coexist with it, respecting the delicate balance that sustains life on Earth.

Dr. Ram Boojh, Advisor, Mobius Foundation expressed that the lack of discussion on the growing global population at key international forums has been a source of disappointment. While demographic milestones and trends have been acknowledged in separate settings, the broader implications of rising population figures have not received the attention they deserve.

For instance, there was an international conference in Bangkok and Pattaya. While this event was significant in its own right, it ran parallel to the discussions on population growth, yet failed to meaningfully address its long-term consequences. It is concerning that despite the achievement of population stabilisation in some regions—such as India, which has attained a total fertility rate (TFR) of 2.1—the overall global population continues to rise.

Current demographic projections indicate that both India's and the world's population may reach a turning point around 2050-2070. While India's population has now crossed 1.41 billion, estimates suggest that it could peak at around 1.6 billion by 2070 before gradually declining. By the end of the century, India's population is expected to stabilise at approximately 1.4 billion. These shifts in population trends have far-reaching consequences, particularly in relation to climate change, biodiversity, and patterns of consumption and production.

Despite the clear link between population growth and environmental challenges, international negotiations rarely frame population dynamics as a central issue. Legal frameworks and multilateral agreements could provide a structured approach to addressing the impact of overpopulation. However, it is unfortunate that the global stage has largely failed to recognise and prioritise this issue.

Population growth influences every major challenge facing humanity, from resource depletion to climate change, yet it remains absent from key global discussions. This oversight underscores the need for stronger advocacy and policy interventions to ensure that demographic concerns are integrated into sustainable development strategies. Addressing this gap in global discourse is essential for creating a balanced and resilient future for both people and the planet.

Outcome and Impact

Achievements in Population Stabilisation

- Recognition of the success of India's family planning programs in achieving near-replacement fertility levels.
- Increased awareness about the link between population stabilisation and sustainability.
- Strengthened collaboration among policymakers, academics, and NGOs to implement practical solutions for population stabilisation.

Future Strategies for Sustainable Population Control

- Emphasis on adolescent girls' empowerment as a critical strategy for long-term population control.
- Advocacy for shifting the focus from mere numbers to ensuring informed family planning choices and improving healthcare services.

Call to Action

Individuals

- Support and promote education, particularly for girls, as a long-term solution to population stabilisation.
- Advocate for and participate in family planning initiatives to make informed reproductive choices.
- Engage in sustainability efforts that reduce resource consumption and environmental impact.

Government

- Expand and strengthen policies that improve access to quality education, particularly for adolescent girls.
- Enhance healthcare infrastructure to ensure lower infant mortality rates and wider access to family planning services.
- Develop integrated strategies that link population stabilisation with environmental and economic policies for sustainable development.

Conclusion

Population growth remains a critical issue that requires a multi-faceted approach. While India has made significant strides in reaching replacement-level fertility rates, challenges persist in high-growth districts and resource management. Sustainable solutions lie in education, empowerment, and healthcare improvements rather than coercive measures. Through collaborative efforts among governments, NGOs, and the private sector, the vision of a balanced and sustainable population can be realised. The discussions at the VIRAM: Agenda Sustainability event underscore the importance of continuous dialogue and strategic interventions to ensure a future where both people and the planet thrive.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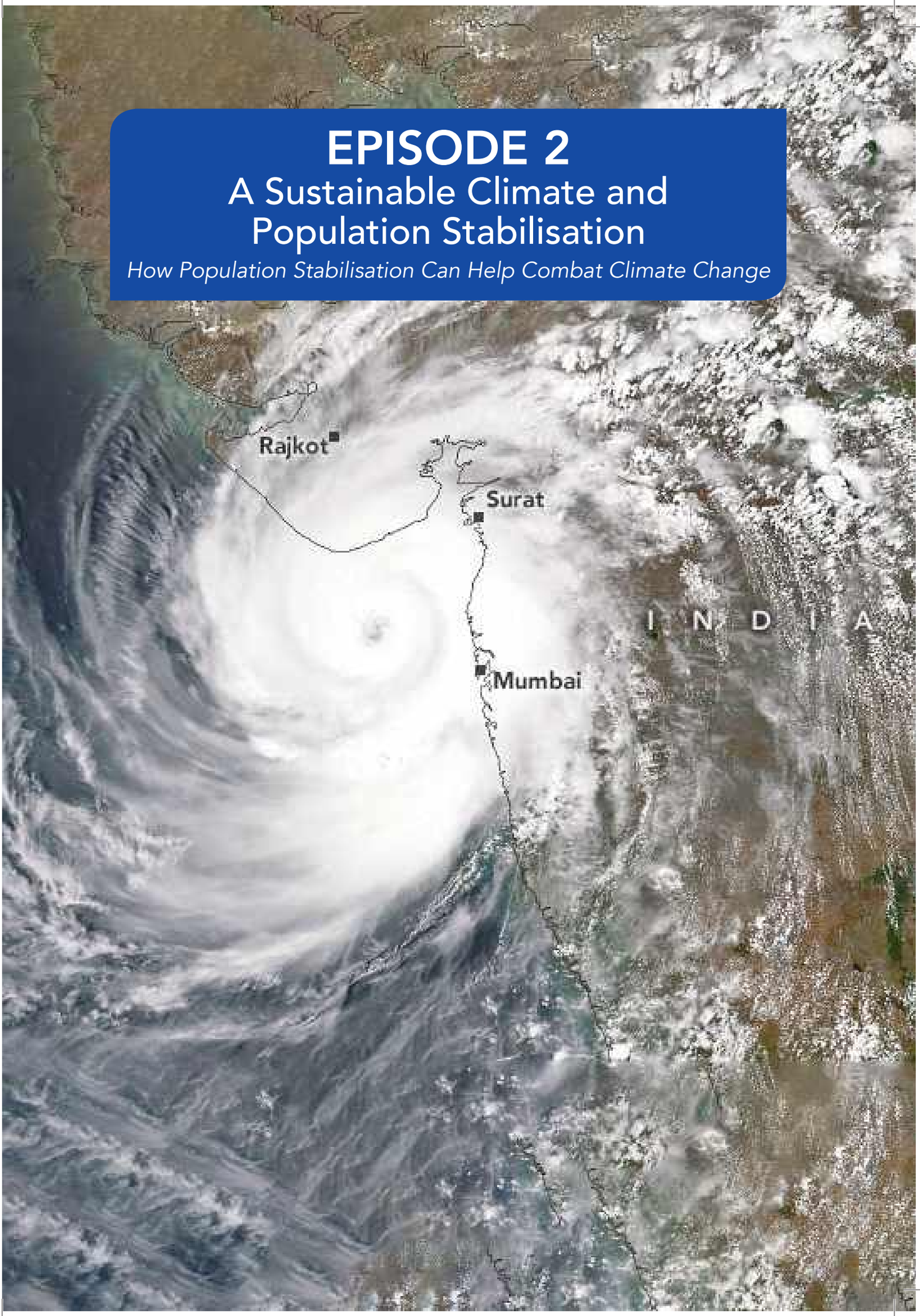
EPISODE 2

A Sustainable Climate and Population Stabilisation

How Population Stabilisation Can Help Combat Climate Change



Episode 2 : A Sustainable Climate and Population Stabilisation

How Population Stabilisation Can Help Combat Climate Change

Episode Synopsis

The episode centered around the discourse on the intricate interplay between population expansion and climatic change. The conversation aimed to explore how population dynamics influence climate change and to outline pragmatic strategies for mitigating adverse consequences. The episode reflects the direct correlation between population growth and increased resource consumption; showcasing that heightened population densities, lead to greater demands for energy, water and food.

The episode also highlights the role of urbanisation in climate change, noting that rapid urban expansion often results in deforestation, loss of biodiversity, and increased carbon footprints due to higher energy consumption and waste generation in cities. The importance of education and family planning in mitigating climate change was underscored, with a focus on improving access to education, particularly for women, and promoting family planning to help stabilise population growth and reduce environmental pressures.

The speakers posited that the integration of sustainable development practices into policy frameworks is imperative: they suggested measures such as adoption of renewable energy sources, enhancement of energy efficiency and the promotion of sustainable agriculture; are critical for mitigating the climate impact associated with population growth. Effective policies, public awareness campaigns and community engagement are fundamental for facilitating behavioural changes and reinforcing climate resilience. Although these strategies are essential, challenges remain, because the implementation of such measures often encounters significant obstacles. This situation calls for a concerted effort from various stakeholders.

Problem Statement

The rapid increase in global population, projected to reach 9.7 billion by 2050, poses significant challenges to climate stability. As the population grows, the demand for resources such as energy, water, and food escalate, leading to higher levels of resource consumption. This increased consumption results in greater greenhouse gas emissions and environmental degradation, which in turn intensifies the effects of climate change. The strain on natural resources and ecosystems becomes more pronounced, contributing to deforestation, loss of biodiversity, and pollution.

Addressing this complex issue requires a multifaceted approach that considers demographic trends, consumption patterns, and sustainable development practices. It is essential to implement strategies that promote efficient resource use, reduce emissions, and protect the environment. This includes adopting renewable energy sources, enhancing energy efficiency, and promoting sustainable agricultural practices. Additionally, improving access to education and family planning can help stabilize population growth and mitigate its impact on the climate. By considering these factors, we can develop comprehensive solutions to address the intertwined challenges of population growth and climate change.

Speakers

Mr. Pradip Burman
Chairman, Mobius Foundation

Dr. Vibha Dhawan
Director General, TERI

Dr. Ram Boojh
Advisor, Mobius Foundation

Mr. Bhagwan Keshbhat
Environmentalist

Mr. Nitin Gadkari
Union Minister of Road Transport & Highways on Population

Mr. Leo Saldanha
Environmentalist

MAIN DISCUSSION POINTS: The Interconnectedness of Population Growth and Climate Change

1. Population Growth and Resource Consumption

As the global population continues to expand, the demand for essential resources like energy, water, and food escalates exponentially. This rising need forces greater extraction of natural resources, contributing directly to higher greenhouse gas emissions and intensifying environmental stress.

For example, the growing population leads to increased electricity consumption, which is often derived from fossil fuels. The more people there are, the more energy is required to power homes, industries, and transportation systems. This reliance on fossil fuels inevitably leads to higher carbon emissions, further exacerbating global warming and climate change.

Agriculture, which sustains a growing population, also plays a significant role in environmental degradation. The expansion of farming operations to feed an ever-growing population leads to deforestation, soil erosion, and a decline in biodiversity. These environmental issues, in turn, have profound effects on climate change. The deforestation that accompanies agricultural expansion reduces the planet's ability to absorb carbon dioxide, while the loss of biodiversity disrupts ecosystems that are crucial for maintaining balance in the natural world.

"Since high consumption patterns dominate in both developed and emerging economies, the pressure on the planet's finite resources has become unsustainable. Efforts to address this crisis must involve either a reduction in consumption levels or a stabilization, if not a reduction, in population growth rates."

— **Mr. Pradip Burman, Chairman, Mobius Foundation** stressed the critical link between population growth and unsustainable consumption patterns, highlighting the need for both a reduction in consumption and a stabilization of population growth to avoid irreversible ecological damage.

2. Urbanization and Climate Impact

Urbanization, which is inherently tied to population growth, is another key driver of climate change. As cities expand to accommodate growing populations, they often replace natural landscapes with infrastructure that consumes vast amounts of energy and resources. This transformation leads to significant deforestation, the loss of natural habitats, and an overall decrease in biodiversity.

Urban areas, by their nature, have much higher rates of energy consumption, waste generation, and greenhouse gas emissions compared to rural regions. The concentration of people in cities results in more vehicles on the road, more industrial activities, and more demand for construction materials—all of which contribute to the amplification of the urban carbon footprint.

Cities are also disproportionately affected by pollution, heat islands, and poor waste management practices. Urban heat islands, for example, occur

when cities become significantly warmer than surrounding rural areas due to the dense concentration of buildings, roads, and vehicles, as well as the lack of vegetation. This exacerbates the effects of climate change, as higher temperatures lead to increased energy use for cooling, further contributing to greenhouse gas emissions.

"The rapid urbanization of Indian cities has led to severe environmental degradation, with the destruction of lakes and natural water bodies being one of the most glaring examples. When lakes and streams are destroyed or encroached upon, rainwater loses its natural pathways and accumulates in unplanned urban areas, causing widespread flooding."
— **Mr. Leo Saldanha, Environmentalist** emphasised the destructive environmental consequences of unchecked urbanization, which further highlights the vulnerability of rapidly growing urban areas to the impacts of climate change.

3. Education and Family Planning

Education and family planning programs are fundamental tools in mitigating the combined challenges of population growth and climate change. Access to education, particularly for women, is directly linked to smaller family sizes and more informed decisions regarding reproductive health.

Educated individuals tend to adopt more sustainable practices, both in their personal lives and in the broader community. By understanding the implications of population growth on environmental sustainability, they are more likely to embrace policies and practices that reduce their carbon footprint. For instance, educated women are more likely to participate in family planning programs, which provide access to contraceptives and reproductive health services that help reduce birth rates.

This reduction in birth rates, in turn, alleviates pressure on resources such as food, water, and energy, decreasing the environmental impact. By stabilizing population growth, we can prevent overexploitation of natural resources and slow down the rate of climate change.

"Loss of biodiversity is not just an environmental issue but also a socio-economic and health crisis. It has significant implications for human health, particularly through the emergence of zoonotic diseases—those that jump from animals to humans."
— **Dr. Ram Boojh, Advisor, Mobius Foundation** emphasised the link between the loss of biodiversity and the expansion of human populations and the environmental stress caused by unplanned development, which can increase human exposure to diseases and create new climate-related health challenges.

4. Sustainable Development Practices

The integration of sustainable development practices into both national and global policy frameworks is essential in addressing the consequences of population growth on climate change. The growing demand for resources requires a shift towards renewable energy sources such as solar and wind power, which can reduce reliance on fossil fuels.

Energy efficiency within industries, buildings, and transportation is another critical component of sustainable development. By adopting more efficient technologies and practices, we can reduce overall greenhouse gas emissions even as the population grows.

Sustainable agricultural practices, including organic farming and agroforestry, are also necessary for mitigating the environmental impacts of population growth. These practices preserve soil health, reduce the use of harmful chemicals, and help maintain biodiversity. Furthermore, they ensure long-term food security while preventing overuse of land and water resources.

"Recent years have made the crisis starkly evident. Across the globe, unusual and extreme weather patterns have become increasingly frequent and severe. Emissions from fossil fuel combustion, industrial processes, and deforestation are among the primary contributors to global warming, leading to these dramatic changes in climate behavior." — **Dr. Vibha Dhawan, Director General, TERI** highlights the stark reality of climate change, emphasizing the need for renewable energy solutions and sustainable development practices to mitigate the growing impact of population-driven environmental degradation.

5. Environmental Advocacy and Policy

Environmental advocacy and strong policy interventions are necessary to combat the dual threats of population growth and climate change. Effective policies must promote sustainable practices, regulate emissions, and protect natural resources from over-exploitation.

Public awareness campaigns and community engagement initiatives play a vital role in educating people about the importance of environmental conservation and fostering sustainable lifestyles. Governments and civil society must work together to create policies that encourage responsible resource use and reduce the negative impact of expanding populations.

Despite these efforts, political and economic interests often conflict, which hinders the development of truly transformative environmental policies. However, increased public support for climate action, coupled with advances in science and technology, can drive meaningful change.

"Mumbai, one of India's most populous and economically significant cities, faces an existential threat due to rising sea levels exacerbated by climate change. Coastal cities like Mumbai are particularly vulnerable to submersion as global temperatures rise, causing polar ice to melt and ocean waters to expand." — **Mr. Bhagwan Keshbhat, Environmentalist** draws attention to the vulnerability of coastal cities, where population growth and climate change intersect to pose a unique set of challenges, including the risk of submersion due to rising sea levels.

Case Studies

National

India's climate policy includes ambitious targets such as achieving net-zero carbon emissions by 2070, increasing non-fossil fuel energy capacity to 500 gigawatts by 2030, and meeting 50% of its energy requirements from renewable sources by 2030[1]. Additionally, India aims to reduce the emissions intensity of its GDP by 45% from 2005 levels by 2030 and create additional carbon sinks of 2.5 to 3 billion tonnes of CO2 equivalent through forest and tree cover by 2030[2]. Progress has been notable, with India becoming the world's fifth-largest solar market and rapidly expanding its renewable energy capacity, reflecting its commitment to combating climate change and transitioning to a sustainable energy future.

National Family Planning Program: This program has been instrumental in reducing fertility rates, contributing to the stabilization of population growth. It addresses reproductive health while promoting education and economic opportunities for women, aligning with sustainable development goals.

Pradhan Mantri Sahaj Bijli Har Ghar Yojana (Saubhagya): This scheme aims to provide electricity to all households in rural India. By improving living standards through reliable energy access, it helps reduce dependency on traditional biomass fuels, thereby lowering carbon emissions. Enhanced living conditions often correlate with lower birth rates, as families with better access to resources tend to have fewer children.

National Solar Mission: Promoting the use of solar energy across the country, this mission has led to large-scale solar projects in states like Gujarat. These projects not only provide clean energy but also create jobs and improve local economies, demonstrating how renewable energy initiatives can contribute to climate resilience while addressing population growth challenges.

Coastal Communities in Gujarat: In the Jamnagar City region of Gujarat, rapid population growth and climate change have led to increased vulnerability to extreme weather events. Efforts to adapt and mitigate these impacts include improving water supply, managing salinity ingress, and enhancing urban planning to reduce the risks of flooding and other hazards[3].

Rajkot's Climate Action: Rajkot has been proactive in mainstreaming climate actions into its urban planning. By leveraging existing governance arrangements, the city has promoted inclusive and climate-resilient infrastructure development. This approach highlights how local governments can scale their efforts to address climate change effectively[4].

International

In Thailand, comprehensive family planning measures implemented since the 1970s have significantly reduced the country's population growth rate, with the fertility

3. Coastal Communities and Climate Change: A Case Study in Gujarat, India
4. Mainstreaming-Climate-Actions-in-Indian-Cities.pdf

rate dropping from 6.1 children per woman in the 1960s to 1.5 in recent years[5]. These measures, which included widespread access to contraceptives, public education campaigns, and community health support, have positively impacted climate change mitigation by reducing pressure on natural resources and lowering carbon emissions per capita. Additionally, the program has supported sustainable development goals by improving health, education, and economic opportunities for women, demonstrating the beneficial link between population control and environmental sustainability.

Outcome and Impact

These examples illustrate how integrated approaches that combine family planning, education, renewable energy, and urban planning can effectively address the dual challenges of population growth and climate change, fostering a more sustainable and resilient future.

India's commitment to mitigating climate change is reflected in its ambitious targets and initiatives like Net Zero and Mission LiFE. The Net Zero target aims for India to achieve net-zero carbon emissions by 2070. This involves transitioning to low-carbon development pathways, enhancing forest and vegetation cover, and promoting sustainable urbanization. Despite the challenges posed by a growing population, India is focusing on reducing emissions intensity and increasing renewable energy capacity to meet its goals. Mission LiFE (Lifestyle for Environment), introduced by Prime Minister Narendra Modi at COP26, is a public movement aimed at encouraging individuals to adopt sustainable lifestyles[6]. It emphasizes mindful and deliberate utilization of resources, leveraging traditional sustainable practices, and creating a global network of 'Pro-Planet People' (P3) who promote environmentally friendly behaviour[7]. This mission seeks to influence demand and supply dynamics, ultimately leading to policy changes that support sustainable consumption and production. Together, these initiatives address the impacts of population growth on climate change by promoting sustainable development and reducing the carbon footprint, thereby contributing to a more resilient and sustainable future for India.

The discussion yielded numerous consequential outcomes directed at enhancing collaboration among stakeholders in confronting the dual exigencies of population growth and climate change. Participants underscored the imperative for comprehensive policies that incorporate demographic considerations into environmental strategies. This approach guarantees that population dynamics are incorporated into climate action plans, ultimately resulting in more efficacious and sustainable solutions.

One of the key outcomes was the consensus regarding the significance of

5. Chapter 5: Demand, services and social aspects of mitigation
6. LiFE LiFEStyle for Environment
7. Life | NITI Aayog

cross-sector collaboration. The dialogue highlighted that addressing foundational issues such as poverty, education and healthcare access is essential for both population management and environmental sustainability. For instance, improving access to education, particularly for women, can lead to diminished fertility rates, thereby empowering communities to embrace sustainable practices. However, the complexity of these interrelations should not be underestimated. Although these efforts may seem daunting, they are essential because they pave the way for holistic solutions that benefit society at large[8].

Similarly improved healthcare services lowers infant mortality and improves overall health outcomes which in turn helps in population stabilisation[9].

The discourse additionally highlighted the need for precise interventions within the realms of urban planning and development. Rapid urbanization, if not managed sustainably, can indeed worsen environmental degradation, increasing carbon footprints significantly. Consequently, integrating green infrastructure and promoting sustainable urban development are recognized as vital strategies to mitigate the repercussions of population growth on climate change. However, this approach requires a comprehensive understanding of systemic challenges; because the implications of urban expansion are multifaceted, addressing them requires innovative solutions. Although these strategies are essential, their successful implementation remains contingent upon collaborative efforts among stakeholders[10].

Furthermore, the dialogue stressed the importance of public awareness and community engagement. Effective environmental advocacy and policy interventions require the active participation of communities. Public awareness campaigns can educate individuals about the environmental impacts of their actions and encourage them to adopt more sustainable lifestyles.

Overall, the discussion highlighted that a multifaceted approach, involving comprehensive policies, cross-sector collaboration, and community engagement, is essential for addressing the intertwined challenges of population growth and climate change. By working together, stakeholders can develop and implement strategies that promote both demographic stability and environmental sustainability.

Call to Action

Addressing the Connection Between Population Growth and Climate Change

1. Role of Individuals in Mitigating Climate Change and Population Growth

- **Advocating for Sustainable Practices:**

Individuals have a crucial role to play

8. Population growth, environmental degradation and climate change | UN DESA Voice
9. Population growth, environmental degradation and climate change | United Nations
10. Population and Climate Change: Decent Living for All without Compromising Climate Mitigation | United Nations

in combating climate change and managing population growth. They can advocate for and adopt eco-friendly practices within their communities. Simple actions such as reducing energy consumption, minimizing waste, and supporting local environmental initiatives can have a collective impact. By adjusting their everyday habits, individuals can significantly reduce their carbon footprints and promote a more sustainable lifestyle.

- **Supporting Family Planning Initiatives:**

A strong link exists between population growth and environmental degradation. As the global population grows, resource consumption increases, amplifying the negative impacts on climate. By supporting family planning programs and advocating for reproductive health education, individuals can help stabilize population growth. Promoting awareness about family planning, ensuring access to contraceptives, and encouraging informed decision-making about family size can slow population growth, thereby reducing the strain on natural resources.

- **Direct Impact on Resources:**

A larger population demands more energy, food, water, and land, which in turn leads to more greenhouse gas emissions, deforestation, and greater resource depletion. By reducing population growth through family planning and sustainable living practices, individuals can help mitigate these pressures, which directly contribute to a more stable climate and reduced environmental damage.

2. Role of Governments in Addressing Population Growth and Climate Change

- **Developing Integrated Policies:**

Governments must take a proactive stance by developing policies that integrate both population dynamics and climate action. A comprehensive approach should involve creating strategies that address demographic trends while promoting environmental sustainability. This includes developing plans that balance population growth with sustainable resource use to avoid exacerbating climate change.

- **Promoting Renewable Energy and Sustainable Practices:**

Governments should focus on policies that promote renewable energy sources, enhance energy efficiency, and implement sustainable agricultural practices. These measures will reduce greenhouse gas emissions and help mitigate the environmental impact caused by the growing population. By transitioning to renewable energy and encouraging sustainable agricultural practices, governments can limit the damage caused by both resource consumption and population expansion.

- **Ensuring Equity and Inclusivity:**

It is vital for governments to ensure that climate action and population management policies are inclusive and equitable. This means addressing the needs of vulnerable populations and ensuring access to education, healthcare, and family planning services. Promoting gender equality

and ensuring that marginalized communities benefit from sustainable development initiatives can help achieve broad-based progress and reduce disparities.

- **Public Awareness and Education:**

  Governments should invest in public awareness campaigns to educate citizens about the importance of environmental conservation and sustainable living. Through public engagement and education, citizens can better understand how population growth contributes to climate change and what actions they can take to make a difference. Informed and engaged populations are more likely to support policies that address both demographic trends and climate resilience.

3. The Strong Connection Between Population Growth and Climate Change

- **Increased Resource Consumption:**

  The expansion of the human population directly increases the demand for energy, water, food, and land. As more people are born, resource consumption skyrockets, leading to the depletion of finite resources. In turn, the extraction and use of these resources—especially fossil fuels—release carbon emissions that contribute significantly to global warming and climate change. The larger the population, the higher the demand, which accelerates the pace of climate degradation.

- **Urbanization and Environmental Strain:**

  Urbanization, driven by growing populations, transforms natural landscapes into cities that require more energy, water, and materials to sustain. The growing concentration of people in urban areas often results in deforestation, increased carbon emissions, and more waste. Urban areas are responsible for a disproportionate share of global energy consumption and greenhouse gas emissions. Cities need to adapt and adopt sustainable practices to mitigate the impact of population growth on the environment.

- **Pressure on Ecosystems and Biodiversity:**

  With more people, there is an increased need for agricultural land, urban development, and infrastructure, all of which put enormous pressure on ecosystems and biodiversity. Deforestation for agriculture or housing and overuse of natural resources not only disrupt local ecosystems but also contribute to the intensifying effects of climate change. The degradation of ecosystems and the loss of biodiversity further exacerbate the impacts of climate change, such as extreme weather events, food insecurity, and water scarcity.

- **Health Impacts and Climate Resilience:**

  Population growth can exacerbate health crises due to pollution, the spread of diseases, and the strain on healthcare systems. More people living in areas prone to environmental hazards (such as coastal areas or regions affected by extreme weather) increases vulnerability to climate-related health risks. Climate change, along with higher

population densities, can lead to the emergence of new diseases, food shortages, and displacement due to extreme weather, all of which further strain resources.

4. The Path Forward: Collective Action for a Sustainable Future

- **Individual and Collective Responsibility:**

  Both individuals and governments must act together to create solutions that address the dual challenges of population growth and climate change. By adopting sustainable habits, supporting family planning, and advocating for responsible policies, we can collectively reduce the environmental impact of a growing population.

- **Innovative Policies and Technological Solutions:**

  Governments must create policies that encourage the use of renewable energy, energy-efficient technologies, and sustainable agricultural practices. Similarly, individuals can help by supporting innovations and technologies that reduce carbon footprints, such as solar power, electric vehicles, and sustainable farming practices.

- **Strengthening Global Cooperation:**

Climate change and population growth are global issues that require international cooperation. Countries must work together to share knowledge, resources, and technologies to address these issues on a global scale. By prioritizing sustainability in every sector—from urban planning to agriculture and healthcare—nations can better cope with the growing challenges posed by both climate change and population growth.

By aligning the efforts of individuals, governments, and communities worldwide, we can mitigate the impacts of population growth and climate change. Through collective action and strong, inclusive policies, we can build a sustainable and resilient future for all.

By working together, individuals and governments can develop and implement effective strategies to address the dual challenges of population growth and climate change. Through collective action, it is possible to create a sustainable and resilient future for all.

Conclusion

The discussion underscored the intricate relationship between population growth and climate change, highlighting the need for a comprehensive approach that integrates education, sustainable development, and robust policy interventions. Improving access to education, particularly for women, empowers individuals to make informed decisions about family size and reproductive health, contributing to population stabilization and climate resilience. Sustainable development practices, such as adopting renewable energy sources, enhancing energy efficiency, and promoting sustainable agriculture, are crucial for reducing the environmental impact of population

growth and ensuring the long-term sustainability of natural resources.

Robust policy interventions are essential, with governments urged to develop inclusive and equitable policies that integrate demographic considerations into climate action plans. Effective policies can drive behavioural changes, support sustainable development, and foster climate resilience. The discussion highlighted the importance of collaboration between individuals and governments, with individuals advocating for sustainable practices and supporting family planning initiatives, while governments create comprehensive strategies addressing both population dynamics and environmental sustainability. Through collective action and a shared commitment to sustainability, it is possible to build a resilient and sustainable future, addressing the intertwined challenges of population growth and climate change.

The Cost of Unsustainability

EPISODE 3

Clearing the Air

The Link Between Population and Air Pollution

Episode 3 : Clearing the Air

The Link Between Population and Air Pollution

Episode Synopsis

This episode explored the link between population growth and the rise in air pollution, particularly in urban areas. It highlighted how population growth and the rise in urbanisation, are accompanied by a commensurate rise in consumption, industrialisation, transportation, use of dirty fuels etc. exacerbating air pollution, making it a critical public health and environmental challenge. It delved into alarming statistics, such as the shortening of life expectancy due to pollution, and discussed solutions at both individual and governmental levels.

Examining the interconnections between air pollution and population dynamics, the episode highlighted key drivers, health impacts, and potential policy responses. By synthesising insights from policymakers and on-ground activists, it underscored the need for sustainable urban planning, green technology adoption, and strengthening environmental policies to safeguard public health and the planet's future.

Problem Statement

Air pollution is one of the biggest issues affecting the world. According to HEI's State of Global Air 2024 Report[1], air pollution accounts for 8.1 million deaths globally, ranking as the second leading risk factor for death. The 2024 Air Quality Life Index[2] shows that while global pollution levels have dropped, countries fail to meet their own pollution standards. Coming to India, in November, 2024 only 1out of 268 cities being monitored for air quality complied with the World Health Organization's (WHO) daily safe guideline concentration[3] (CREA monthly ambient air quality snapshot: November 2024). The same report also ranked Delhi as the most polluted city in the country for the month. The capital's monthly average PM 2.5 concentration was measured at 249 µg/m³, surpassing the daily National Ambient Air Quality Standards (NAAQS) limit of 60 µg/m³ by a factor of more than 4.

It is no coincidence that urban areas record the most air pollution. Urban centres, which are already struggling with inadequate infrastructure, face intensified challenges as the growing population leads to increased demand for housing, transportation, and energy. This in turn leads to higher emissions from vehicles, industries, and residential energy use - with urban areas accounting for approximately 70% of global CO2 emissions (UNEP[4]). Rapid population growth and urbanisation has created a complex nexus with air pollution, resulting in severe consequences for environmental sustainability, public health, and overall quality of life.

Air pollution has become one of the most pressing public health crises, with almost 7 million annual premature deaths attributed to pollution-related causes (WHO[5]). Further, the growing prevalence of particulate matter (PM 2.5 and PM 10), industrial emissions, and vehicular pollutants exacerbates respiratory and cardiovascular diseases.

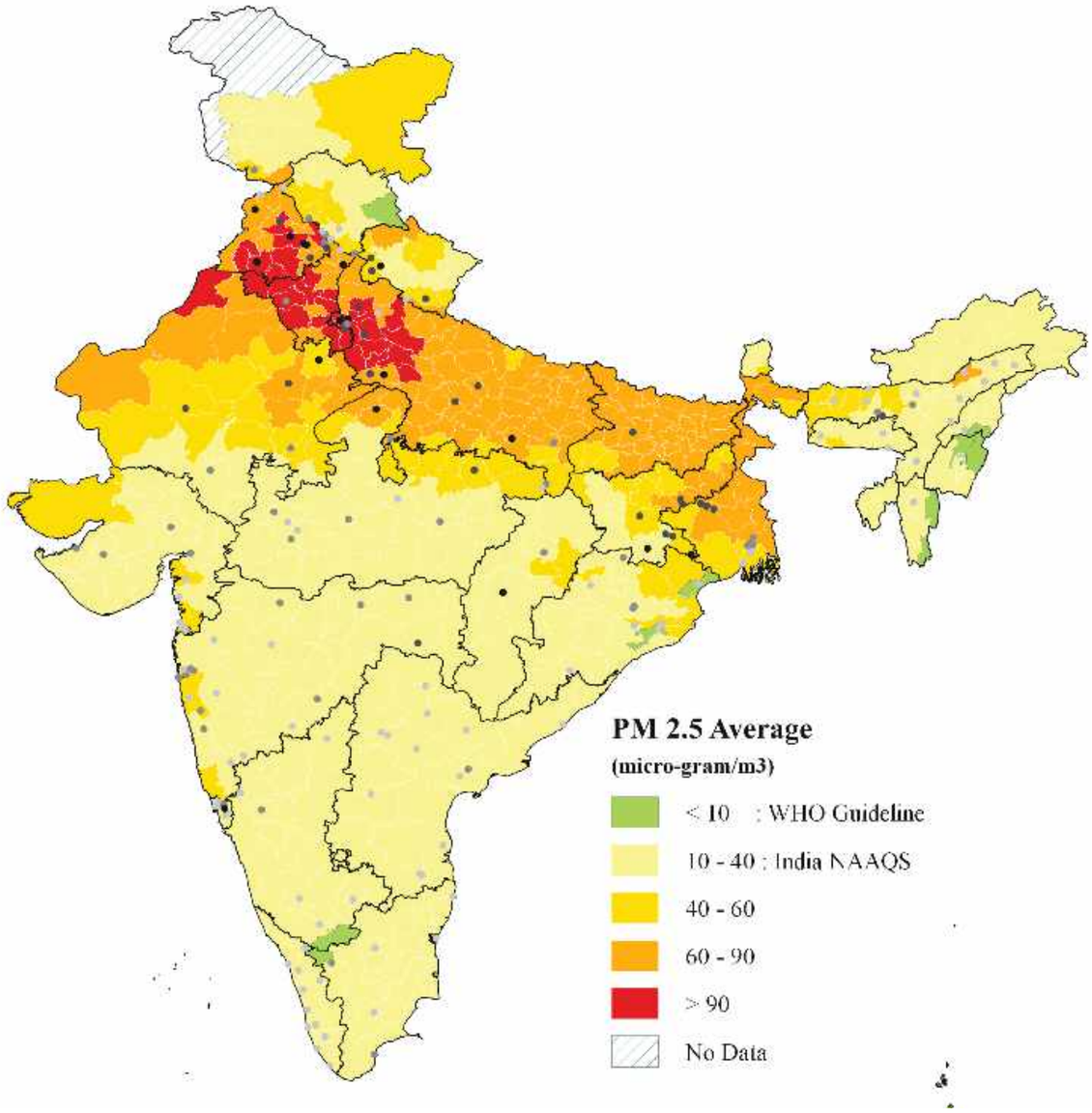
While policy initiatives like the National Clean Air Programme, promotion of renewable energy, and urban greening have been introduced to combat air pollution, systemic issues such as ineffective policy enforcement, lack of technological adaptation, and limited community involvement continue to impede progress. Moreover, unsustainable resource consumption patterns and reliance on fossil fuels further strain efforts to achieve cleaner air and sustainable urban ecosystems.

Addressing the multifaceted crisis of air pollution requires a multidimensional approach that considers the complex interplay of factors such as population growth, rapid urbanisation, and increasing

1. *https://www.healtheffects.org/announcements/new-state-global-air-report-finds-air-pollution-second-leading-risk-factor-death*
2. *https://aqli.epic.uchicago.edu/wp-content/uploads/2024/08/AQLI-2024-Report_English.pdf*
3. *https://energyandcleanair.org/india-monthly-ambient-air-quality-snapshot-november-2024/*
4. *https://www.unep.org/explore-topics/resource-efficiency/what-we-do/cities-and-climate-change*
5. *https://www.who.int/news-room/fact-sheets/detail/ambient-%28outdoor%29-air-quality-and-health*

pollution levels. Violations of environmental regulations further exacerbate air quality deterioration, necessitating better monitoring, stronger enforcement and accountability. The health impacts of escalating air pollution underscore the urgency of the matter, as it directly affects public well-being and productivity.

Collaborative efforts among policymakers, industries, non-governmental organisations, and citizens are crucial to bridging the gap between policy formulation and effective implementation. Additionally, a significant focus must be placed on raising public awareness and fostering behavioural change to promote collective action against air pollution. Without immediate and sustained interventions, the intertwined challenges of air pollution, population growth, and urban expansion risk undermining India's developmental aspirations and jeopardising the health of its current and future generations.



Source: Lower Pollution, Longer Lives: Life Expectancy Gains if India Reduced Particulate Matter Pollution - Greenstone et al, 2015

Speakers

Hon.
Mr. Bhupendra Yadav
Union Cabinet Minister, Environment, Forest and Climate Change

Mr. Pradip Burman
Chairman, Mobius Foundation

Dr. Ram Boojh
Advisor, Mobius Foundation

Mr. R. Suresh
Area Convener, Centre for Environment Studies, TERI

Ms. Prarthana Borah
Director, CDP India

Dr. Sandeep Nayar
Sr. Director and HOD, Chest and Respiratory Diseases, BLK Hospital, New Delhi

Mr. Vikrant Tongad
Environmentalist

MAIN DISCUSSION POINTS

1. Air Pollution and Population Growth

- **Increased Demand Due to Overpopulation:** The surge in population directly intensifies the demand for housing, transportation, and industrial activities, all of which contribute significantly to rising pollution levels. As populations grow, urban sprawl leads to a higher number of vehicles on the roads, more construction, and an increased demand for energy, much of which comes from fossil fuels. This creates a vicious cycle of greater emissions and deteriorating air quality.

  "The modern reliance on automobiles and energy consumption represents a significant source of air pollution, posing critical challenges to global sustainability," emphasized **Mr. Pradip Burman, Chairman of Mobius Foundation.** The increase in vehicular emissions, particularly in fast-growing cities, significantly impacts air quality and exacerbates climate change.

- **Connection Between Population Growth and Pollution:** Rapid population growth, especially in urban areas, is a primary driver of air pollution. As the number of people increases, so does the need for transportation, energy, and industrial products. This growth accelerates the emission of harmful gases, such as carbon dioxide (CO2) and particulate matter (PM 2.5), both of which are major contributors to poor air quality.

  "Air pollution is a multifaceted problem driven by urbanization, industrialization, and the exponential rise in automobile use," stated **Dr. Ram Boojh, Advisor at Mobius Foundation**. He pointed out that the rapid expansion of cities leads to more construction activities, increased energy consumption, and a growing number of vehicles, all of which exacerbate pollution levels.

2. Rapid Urbanization and Increasing Pollution

- **Urban Growth and Pollution Levels:** By 2030, it is estimated that 40% of India's population will live in urban areas[6]. This rapid urbanization, especially in cities like Delhi and Mumbai, is one of the leading causes of deteriorating air quality. Unplanned urban growth, increased industrial activities, and rising vehicle numbers directly contribute to higher levels of air pollution.

  "Keeping the city and its air clean is our collective responsibility. Clean, green energy must be emphasized in industry," urged **Hon. Mr. Bhupendra Yadav, Union Cabinet Minister, Ministry of Environment, Forest and Climate Change**. His statement underscores the need for sustainable urban planning and clean energy adoption to mitigate pollution.

6. https://moneymint.com/mckinsey-report-urban-india-2030-projections-statistics/

- **Global Impact of Urbanization:** According to the World Health Organization (WHO), 92% of the world's population is exposed to harmful air quality levels[7], with rapid urbanization in developing countries like India significantly worsening this issue. Densely populated urban areas are often subject to air pollution levels that are far above the safety standards set by global health organizations.

3. Population Driving Growth in Transportation and Fuel Consumption

- **Surge in Vehicle Numbers and Fuel Consumption:** The population growth in India has been accompanied by a disproportionate rise in the number of personal vehicles on the road. Over the past decade, India's population grew by 26%, but the number of personal motor vehicles increased by 138%[8]. This significant growth in transportation directly contributes to rising emissions from petrol and diesel-powered vehicles.

  "The transportation sector, dominated by internal combustion engine vehicles, emits vast quantities of greenhouse gases (GHGs) such as carbon dioxide (CO2), as well as particulate matter (PM 2.5) and nitrogen oxides (NOx)," explained **Mr. Pradip Burman, Chairman of Mobius Foundation.** The excessive dependence on motor vehicles is a major contributor to deteriorating air quality and an unsustainable increase in pollution.

- **Petrol Consumption and Environmental Impact:** The rapid growth in fuel consumption, particularly petrol, is another indicator of how population increases directly impact the environment. In December 2024, India saw a 10.56% year-over-year rise in petrol consumption[9], which further exacerbates air pollution and its adverse effects on health.

4. Health Impacts of Increasing Air Pollution

- **Widespread Health Consequences:** Air pollution is not just an environmental issue; it also poses severe health risks, especially in densely populated urban areas. Prolonged exposure to pollutants, such as particulate matter (PM 2.5), can lead to respiratory problems, heart diseases, and even cancer[10].

  "Once the pollutant goes inside our lungs, it goes into each and every part of our body through the blood. The heart, liver, kidneys; all parts of the body are getting affected," stated **Dr. Sandeep Nayar, Sr. Director and Head of Chest and Respiratory Diseases at BLK Hospital.** This statement highlights the widespread, often invisible, health risks posed by air pollution, which affects multiple

7. https://www.sciencedaily.com/releases/2016/09/160927144248.htm
8. https://www.orfonline.org/expert-speak/accelerating-urban-transport-reforms-for-effective-city-level-action
9. https://energy.economictimes.indiatimes.com/news/oil-and-gas/indias-petrol-consumption-up-10-56-diesel-demand-grows-5-85-in-dec-2024/116869529
10. https://www.worldbank.org/en/country/india/publication/catalyzing-clean-air-in-india

organs and systems within the human body.

- **Global Burden of Air Pollution:** WHO estimates that air pollution causes approximately 6.7 million premature deaths globally each year[11], with South Asia being especially hard hit. The combination of industrialization, urbanization, and a growing population results in increasingly harmful air quality, exacerbating health risks for millions of people.

5. Violation of Regulations Worsens Air Quality

- **Ineffective Enforcement of Emission Norms:** The failure to properly enforce emission standards for industries and vehicles further aggravates the air pollution crisis. Many industries and vehicles continue to violate established emission norms, releasing harmful pollutants into the air and making it even more difficult to improve air quality.

  "The industrial sector is a major source of air pollution due to the combustion of fossil fuels in manufacturing processes," noted **Dr. Ram Boojh, Advisor at Mobius Foundation**. The lack of stringent enforcement and monitoring is a critical factor in the continued deterioration of air quality.

6. Need for Advanced and Comprehensive Air Quality Monitoring

- **Monitoring and Data Collection:** To effectively tackle air pollution, more comprehensive and advanced air quality monitoring systems are essential. The current monitoring networks, though functional, often lack the coverage, technological sophistication, and real-time data necessary for effective decision-making.

  "One critical gap that needs urgent attention is the lack of hyperlocal measurement capabilities," pointed out **Ms. Prarthana Borah, Director at CDP India**. Accurate, hyperlocal air quality data would help identify pollution hotspots and provide a more granular understanding of the sources contributing to poor air quality.

7. Government Initiatives and Their Effectiveness

- **National Clean Air Program (NCAP):** The Indian government has launched initiatives such as the National Clean Air Program (NCAP), which aims to reduce air pollution in the most affected cities by improving monitoring systems and implementing targeted mitigation strategies. Despite these efforts, challenges in implementation remain, including a lack of public involvement and insufficient execution of the proposed measures.

  "We have already identified 132 cities as the most polluted in the country," remarked **Mr. R. Suresh, Area Convener at TERI.** The NCAP is a crucial step in addressing the national air pollution crisis, but effective implementation remains key to its success.

11. https://www.who.int/news-room/fact-sheets/detail/ambient-%28outdoor%29-air-quality-and-health

Case Studies

Rigorous Air Quality Policies in Beijing, China[12]

- Beijing introduced stringent air quality measures, including reducing coal-burning, promoting electric vehicles (EVs), and enforcing stricter emissions standards. These actions were part of China's broader strategy to improve urban air quality.
- Between 2012 and 2020, Beijing reduced PM 2.5 levels by 54%, and NO2 by 23%, significantly improving air quality.

Air Pollution Initiatives in India

- Several cities in India have successfully implemented initiatives to reduce air pollution[13]:
  - Delhi formed 52 cross-government teams to ensure implementation of its Graded Response Action Plan (GRAP) during peak pollution season.
  - Ahmedabad implemented a health-based plan to protect citizens from high levels of air pollution.
  - Nagpur has developed a comprehensive action plan[14] to reduce air pollution targeting reduction of pollution from vehicular emissions, re-suspended road dust, industry, construction, solid waste management (trash, biomass, landfill burning), domestic fuel burning, diesel generator sets, and bakeries.
  - Pune is promoting non-motorised transport in an effort to reduce traffic congestion and near-roadway air pollution.
- Given India's vastness and diversity, one-size-fits-all solutions might be impractical; local solutions with active community participation are essential along with out-of-the-box thinking to prioritise novel ideas and lead to impactful and sustainable interventions.

Outcome and Impact

Health and Environmental Benefits: Initiatives to improve air quality, such as promoting clean fuels, electric vehicles, and renewable energy, have led to significant health improvements, including reduced respiratory and heart diseases. Public awareness and engagement in pollution reduction efforts have also contributed to healthier populations and cleaner environments.

Policy and Enforcement: Stricter emission norms for industries and vehicles, along with stronger enforcement of environmental policies, and comprehensive and better quality of monitoring are crucial to tackling air pollution. The implementation

12. https://www.nature.com/articles/s41467-024-49539-9
13. https://pmc.ncbi.nlm.nih.gov/articles/PMC11463883/#:~:text=Several%20cities%20in%20India%20have,levels%20and%20inform%20policy%20decisions
14. https://www.nrdc.org/bio/anjali-jaiswal/highlighting-city-actions-reduce-air-pollution-india

of these policies, coupled with international attention and collaboration, can drive effective change, leading to sustained improvements in air quality and public health.

Call to Action

The episode emphasises the urgent need for collective action to address air pollution, which is both a public health crisis and a symptom of uncontrolled population growth. It calls for people to support clean energy initiatives and adopt eco-friendly practices and advocate for stricter air quality standards, with better pollution monitoring systems.

Individuals

- Increasing greenery at the household level is an effective way to reduce air pollution and improve air quality in the immediate vicinity.
- Planting trees, shrubs, and indoor plants helps absorb pollutants such as carbon dioxide (CO2) and nitrogen dioxide (NO2).
- Home gardens, rooftop greenery, and vertical gardens can enhance air quality while contributing to a cooler microclimate.

Government

- Governments can adopt large-scale afforestation strategies, such as creating Miyawaki forests, to mitigate air pollution effectively.
- By establishing Miyawaki forests in urban and peri-urban areas, governments can enhance carbon sequestration, reduce urban heat islands, and improve biodiversity.
- This approach can be integrated into city master plans, parks, and degraded land reclamation projects, offering long-term environmental and public health benefits.

Conclusion

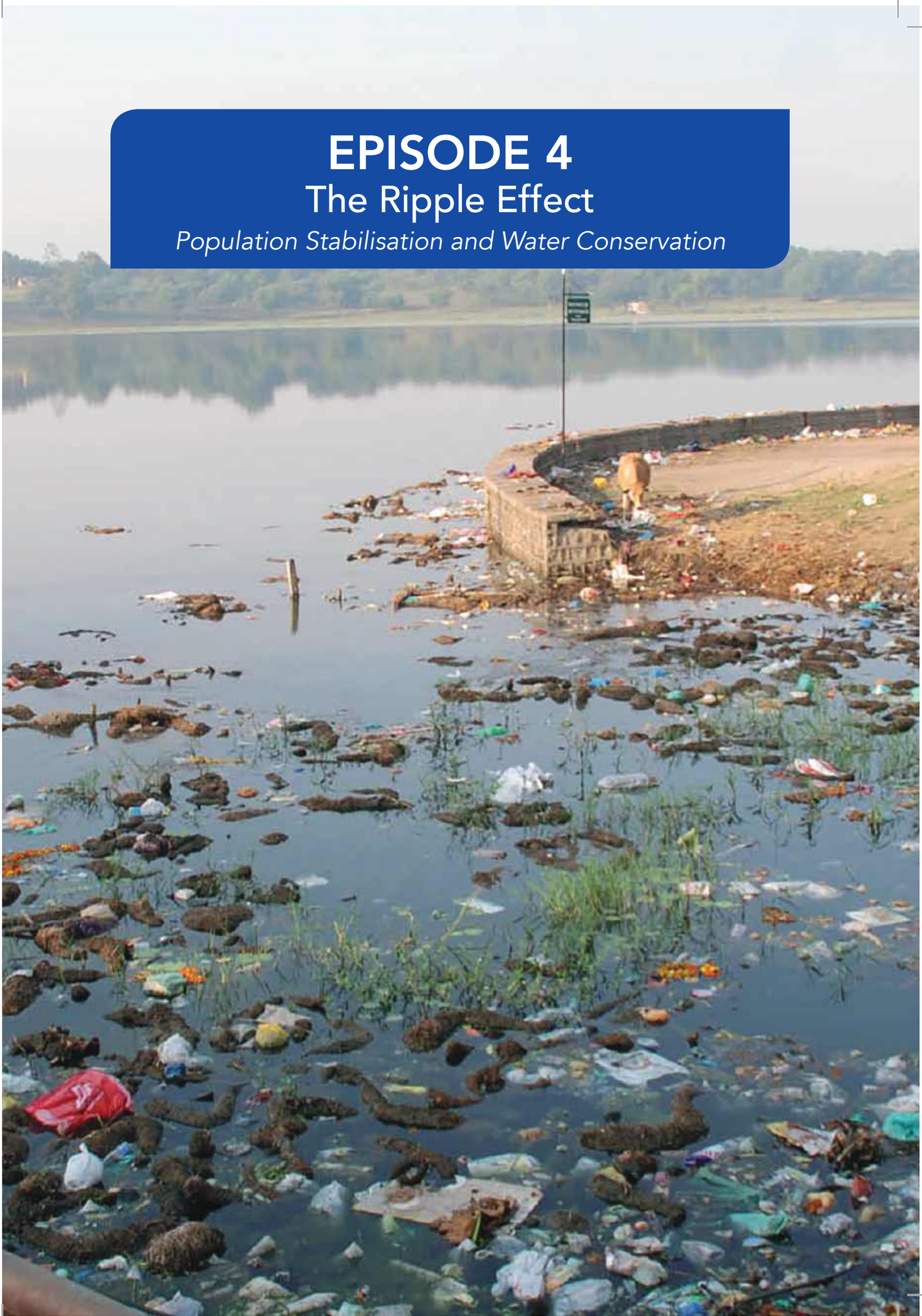
The intricate nexus between rapid population growth, urbanisation, and air pollution has emerged as one of the most critical challenges of our time, threatening environmental sustainability, public health, and urban liveability. Despite initiatives like the National Clean Air Programme and the promotion of renewable energy, systemic barriers such as ineffective enforcement, outdated technologies, and limited community engagement hinder meaningful progress.

Without immediate and sustained interventions, the compounded challenges of air pollution, population growth, and urban expansion will continue to undermine developmental goals, with dire consequences for environmental health and the well-being of future generations. It is only through an integrated, sustained, and inclusive effort that we can pave the way for cleaner air, healthier communities, and a sustainable future.

EPISODE 4

The Ripple Effect

Population Stabilisation and Water Conservation



Episode 4 : The Ripple Effect

Population Stabilisation and Water Conservation

Episode Synopsis

This episode explored the considerable impact of population growth on water pollution. As the population continues to rise, rapid industrialization and unyielding developmental activities impose substantial pressure on available water resources. India—already grappling with water stress—is nearing the water-scarce designation with the declining per capita water availability from 1,545 cubic meters in 2011 to 1,486 cubic meters in 2021. It is projected to further decrease to 1,367 cubic meters by 2031 (CWC, 2019)[1] and overall water demand is anticipated to increase by 40% in 2030. This situation raises concerns, because the increasing demand complicates efforts to manage not only quantity but quality of water as well. Although solutions exist, their implementation is often hindered by various factors.

The rapidly growing urban population has led to an increased demand for both drinking water and sanitation services. In 2015, urban regions in India produced approximately 61,948 million litres per day (MLD) of sewage; however, the existing sewage treatment capacity was a mere 23,277 MLD, which constitutes about 37% of the sewage generated (MoEFCC, 2018)[2]. **This significant shortfall in sewage treatment capacity results in a considerable amount of untreated or only partially treated sewage contaminating water bodies.**

For the industrial sector, industrial water demand in India accounts for approximately 8% of the overall water withdrawal and it is anticipated to rise significantly—from 56 BCM in 2010 to 151 BCM by 2050 (CWC, 2014)[3]. Furthermore, the untreated wastewater from industrial sources, exacerbates the pollution of these water bodies.

For the agriculture sector, although agricultural expansion necessitates intensive irrigation practices, this frequently leads to the over-extraction of groundwater resources. The run- off from the non-point sources and agriculture further contributes to the pollution of the water bodies.

This contamination not only leads to a rise in incidents of waterborne diseases but also adversely affects the aesthetic value of water bodies and their adjacent environments, representing a genuine public health hazard. Although

1. https://docslib.org/doc/4880136/reassessment-of-water-availability-in-india-using-space-inputs
2. CPCB | Central Pollution Control Board
3. mospi.gov.in/sites/default/files/reports_and_publication/statistical_publication/social_statistics/comp_SECTION 6_16mar16.pdf

initiatives are currently underway to tackle these pressing issues, the obstacles remain formidable because of the constantly growing population pressures, posing a threat to the long-term water security.

The episode underscored the significant challenges water sector is facing that arise from the growing population and urbanization. Health impacts, however are exacerbated by the escalating water pollution. Potential policy interventions may serve to address these pressing issues; although the effectiveness of such measures remains uncertain. This intricate situation demands careful consideration, because it affects not just the environment but also public health.

Problem Statement

Ensuring access to safe drinking water and sanitation is a critical aspect of the United Nations' 2030 Development Agenda, particularly Sustainable Development Goal (SDG) 6. Despite various initiatives by the Indian government, significant gaps remain in achieving this goal. The National Water Policy (NWP), 2012, aims to provide potable water for all citizens, essential for health and hygiene. However, water security is crucial not only for health but also for food, nutritional security, and economic stability. Other SDGs, such as good health, gender equality, and sustainable urban development, are also dependent on the availability of clean drinking water. Continuous vigilance and innovative solutions are necessary to bridge these gaps.

Population growth increases the demand for resources, leading to more agricultural and industrial activities, which often result in runoff and waste discharge. This pollution of rivers and lakes causes health issues and harms ecosystems. India faces significant challenges from both overexploitation and pollution of its water resources. Untreated wastewater contaminates about 75% of surface water bodies[4]. Technological and financial bottlenecks hinder the large-scale impact of existing policies and programs. As urbanization progresses, addressing

4. CPCB | Central Pollution Control Board

the growing water demand requires a focus on wastewater treatment and recycling, integrating diverse policies into a cohesive governance framework.

India is the largest global consumer of groundwater, extracting approximately 230 billion cubic meters annually, more than a quarter of the world's total groundwater use. Groundwater depletion ranges between 122 and 199 billion cubic meters[5]. Over 60% of irrigated agriculture and 85% of potable water supplies depend on groundwater[6]. Declining water levels in about 30% of wells monitored by the Central Ground Water Board, along with contamination issues such as fluoride, pose significant challenges[7]. Urban areas like Delhi and Bengaluru face acute groundwater depletion and contamination, exacerbated by rapid urbanization and inadequate management strategies. Water stress and scarcity are escalating due to the growing global population and climate change, which further strains water resources by altering distribution and causing more frequent and severe droughts. Addressing these challenges requires comprehensive management practices, policy interventions, and strong community engagement.

5. prsindia.org/files/policy/policy_analytical_reports/1455682937--Overview of Ground Water in India_0.pdf
6. India Groundwater: a Valuable but Diminishing Resource
7. India's Groundwater Quality Report 2024 Highlights Severe Contamination Issues and Urgent Need for Policy Reforms

Speakers

Mr. Praveen Garg
IAS (Rtd.), President - Mobius Foundation

Dr. Ram Boojh
Advisor, Mobius Foundation

Mr. Rajendra Singh
Padma Shri Awardee, Water Man of India and Environmentalist

Mr. Somnath Bharti
Vice Chairman, Delhi Jal Board

Mr. Prahlad Singh Patel
Minister of State for Jal Shakti

Mr. Anshuman
Associate Director - Water Resources, TERI

Mr. Himanshu Thakkar
Environmental Activist and Water Expert

MAIN DISCUSSION POINTS

1. Water Pollution and Population Growth

a. Pollution Increase Due to Population Growth

As the global population rises, waste generation across various sectors increases dramatically. Industrial effluents, agricultural runoff, and untreated sewage are major contributors to water contamination. This growing waste burden on water bodies significantly reduces water quality, directly harming aquatic ecosystems. The resulting pollution disrupts biodiversity, threatens the survival of various species, and leads to long-term environmental imbalances. The increase in population also accelerates the demand for water for both domestic and industrial use, intensifying the problem.

b. Social Impacts of Water Pollution

Beyond environmental damage, water pollution leads to social issues, particularly in areas where water resources are already scarce. The

UN reports that in 2022, 2.2 billion people lacked access to safe drinking water. Similarly, over 3.4 billion lacked adequate sanitation services, and 1.9 billion did not have basic hygiene services. These deficiencies exacerbate public health crises, foster social instability, and hinder economic development, particularly in densely populated regions.

2. Population Growth and Water Stress

a. Increased Demand and Water Scarcity

Rapid population growth escalates the demand for water across various sectors. With an expanding population, both domestic and agricultural water usage intensify, straining already limited water resources. The growing extraction of groundwater, a crucial water source, is unsustainable and leads to depletion of aquifers. More than 60% of India's population faces water stress, and NITI Aayog projects a 40% increase in water demand by 2030. This escalating demand is a major contributor to widespread water scarcity, especially in already arid or over-extracted regions.

b. Agricultural Needs

Agriculture is the largest consumer of water, especially in developing countries like India. Irrigation alone accounts for 72% of the total water consumption in developed nations, while the figure in developing countries is 90%. In India, population growth has driven food production demands from 50 million tonnes in 1951 to 332.3 million tonnes in 2023-24, intensifying pressure on limited water resources. This creates significant water stress, as agricultural sectors rely heavily on groundwater for irrigation purposes.

3. Rapid Urbanisation and Increasing Water Pollution

a. Urbanisation and Water Stress

As India's urban population swells, urbanization—often unaccompanied by adequate infrastructure development—worsens water stress and pollution. In 400 cities worldwide, 20 are located in India, facing severe water stress. Cities like Chennai, Delhi, Mumbai, and Kolkata are dealing with alarming water pollution levels, exacerbated by rapid industrialisation and population influx. Urbanisation outpaces the development of necessary waste management systems, leading to untreated sewage being dumped into water bodies.

b. Industrial Water Consumption

Industrial facilities in India utilize 2 to 3.5 times more water per unit of production than their counterparts in other countries. As industries multiply, they further deplete water resources, intensifying competition for water in urban areas. By 2036, India's urban population is projected to reach 600 million, placing immense pressure on already-stressed water supplies.

c. Need for Investment in Water Infrastructure

Approximately 70% of urban infrastructure in India remains undeveloped, and $840 billion is

needed to ensure water security in these cities. Without significant investment in water systems and proper urban planning, the country risks facing severe water shortages in its most populous regions.

4. Impact of Increasing Population on Water Pollution and its Consequences

a. Health Risks of Contaminated Water

Increasing pollution, primarily from agricultural runoff, industrial waste, and untreated sewage, poses grave risks to human health. Waterborne diseases like gastrointestinal infections, cholera, and typhoid fever thrive in polluted water. Furthermore, exposure to toxins like lead, mercury, and pesticides can cause neurological damage, cancer, and birth defects.

b. Health and Reproductive Issues

Contaminated water can cause reproductive disorders, cardiovascular problems, and developmental issues. Heavy metals in water, including arsenic, cadmium, and lead, are linked to liver damage, kidney failure, and various cancers, including leukemia.

c. Aquatic Ecosystem and Biodiversity Disruption

The pollution also disrupts aquatic ecosystems. Excessive nutrients from fertilizers and untreated sewage lead to eutrophication, causing algal blooms that deplete oxygen and create dead zones where aquatic life cannot survive. Moreover, species relying on inland wetlands have faced a steep decline, with 81% of such species declining faster than those in other habitats. This shift has led to growing extinction risks.

5. Violation of Regulations Worsens Water Quality

a. Inefficient Enforcement of Water Regulations

Despite governmental regulations to safeguard water quality, enforcement remains weak. Industrial pollutants like untreated chemical effluents are routinely discharged into rivers such as the Yamuna, despite regulations requiring zero-liquid discharge (ZLD). Such violations exacerbate water quality issues and increase the difficulty in maintaining safe drinking water standards.

b. Disparities in Water Allocation

In India, 80% of water resources are allocated for agriculture, leaving only 20% for industrial and domestic use. However, inefficient water distribution and allocation practices lead to significant inequities, where some areas suffer from water scarcity, while others face excess or mismanaged supply.

6. Government Initiatives and Their Effectiveness

a. Namami Gange Programme

The Namami Gange Programme, launched in 2014, has made considerable progress in cleaning up the Ganga River, benefiting millions. The reduction in pollution has revitalized the river's biodiversity, with sightings of endangered species

like Gangetic Dolphins and Gharials indicating recovery.

b. Jal Shakti Abhiyan (JSA)

Since 2019, the Jal Shakti Abhiyan has focused on water conservation, rainwater harvesting, and groundwater recharge, impacting over 740 districts. The program's success can be seen in the increase in groundwater levels and improvements in water availability across various regions, benefiting both agriculture and domestic consumption.

c. Smart City Initiative

The Smart City Initiative, started in 2017, has also contributed to better sanitation and wastewater treatment in 100 cities. By focusing on efficient water management, the initiative has reduced pollution and improved water quality in urban areas.

Experts Opinion

"The main cause of diseases is water pollution. There are two types of pollution in India: one is dirty water from urban populations going directly into rivers and groundwater resources, and the other is due to industrialisation. So, our social, economic, and health conditions are being affected day by day."

Mr. Rajendra Singh
Padma Shri Awardee, Water Man of India and Environmentalist

Mr. Praveen Garg
IAS (Rtd.), President - Mobius Foundation

"Overpopulation is a significant factor contributing to the strain on the country's water resources. As the population grows, the demand for water rises proportionally, leading to declining per capita water availability. Additionally, overpopulation contributes to pollution of water sources due to increasing sewage generation, against the available treatment capacity."

"The exponential rise in population has placed immense pressure on existing water resources. Over-extraction of groundwater has led to the depletion of aquifers, while surface water sources like rivers and lakes are shrinking due to urbanisation, industrial pollution, and climatic changes."

Dr. Ram Boojh
Advisor, Mobius Foundation

Mr. Anshuman
Associate Director - Water Resources, TERI

"Leakages and losses in the water distribution systems lead to the waste of a substantial portion of available water, while inequitable water distribution often exacerbates scarcity and unmet demand."

"Untreated industrial effluents being discharged into rivers represent a significant environmental and public health concern. Monitoring water quality and ensuring compliance with zero-liquid discharge norms can help curb this issue."

Mr. Somnath Bharti
Vice Chairman, Delhi Jal Board

"The absence of a comprehensive urban water policy in India has left cities without a cohesive framework to manage and utilise local water resources sustainably. By reimagining urban water as a resource, Indian cities can move toward a more sustainable and equitable future."

Mr. Himanshu Thakkar
Environmental Activist and Water Expert

Mr. Prahlad Singh Patel
Minister of State for Jal Shakti

"Innovative solutions like treating and reusing wastewater in cities like Surat and Nagpur showcase how industries and municipalities can make treated water a valuable resource, thus conserving freshwater for critical uses like drinking and agriculture."

Case Studies

Significant water-related initiatives have profoundly enhanced quality of life for numerous communities. In this context, several noteworthy narratives emerge:

International Case Study:

In São Paulo, Brazil, the state-owned water utility SABESP confronted the formidable task of optimizing wastewater treatment within rapidly expanding metropolitan context. By deploying cutting-edge treatment technologies and refining infrastructure, they succeeded in elevating water quality and sanitation services for excess of 20 million residents. This initiative not only bolstered public health; however, it also established benchmark for other urban centres grappling with analogous challenges.

Shifting focus to **Phnom Penh (Cambodia)**, the Phnom Penh Water Supply Authority (PPWSA) addressed the dilemma of excessive water losses and operational inefficiencies. Through a comprehensive program that encompassed infrastructure upgrades, the reduction of non-revenue water and enhancements in management practices,

PPWSA fundamentally transformed its operations. The outcome was a striking decrease in water losses; thus, ensuring a dependable water supply for the burgeoning population of the city. However, this transformation is not merely a testament to effective management, but also a reflection of the necessity to adapt (because) urban demands continue to escalate. Although challenges remain, the commitment to ongoing improvement persists.

National Case Study

Initiatives by Rajendra Singh, the Waterman of India: Rajendra Singh, known as the "Waterman of India," has made significant contributions to water conservation and management through various initiatives. He has revived traditional water harvesting systems like johads and check dams, which help in collecting and storing rainwater to recharge groundwater levels. Leading NGO Tarun Bharat Sangh, Singh has built over 8,600 water conservation structures, benefiting more than 1,000 villages in Rajasthan. His efforts have also led to the rejuvenation of five rivers in the state, providing water for agriculture and drinking purposes. Singh's approach emphasizes community-driven water management, empowering villagers to take charge of their water resources. His advocacy and awareness efforts have earned him national and international recognition, including the Magsaysay Award and the Stockholm Water Prize. Additionally, as a member of the National Ganga River Basin Authority, Singh contributes to the conservation and management of the Ganga River. His initiatives have profoundly enhanced the quality of life for numerous communities in India by ensuring sustainable water management and conservation.

Rajasthan's Traditional Water Conservation Techniques: In Rajasthan, traditional water conservation techniques such as rainwater harvesting and the construction of check dams have been implemented to manage water scarcity. These techniques have significantly increased water availability for drinking and irrigation, supporting the livelihoods of rural communities. The initiative has also helped in recharging groundwater levels and ensuring sustainable water use.

In Chennai (India) faced significant water challenges because of a population increase exceeding fifty percent over the last two decades. The Chennai Metropolitan Water Supply and Sewerage Board adopted WICER principles, which focus on water and energy recovery from wastewater. This initiative has not only increased the city's resilience to water scarcity; but it has also provided a sustainable solution for future water needs.

Outcome and Impact

1. Improved Public Health

As the population increases, the demand for clean water and sanitation services becomes more urgent. Access to safe drinking water significantly reduces the risk of waterborne diseases such as cholera, dysentery, and typhoid, which are prevalent in areas with poor water quality.

In India, the Swachh Bharat Mission, launched in 2014, aimed to eliminate open defecation and improve waste management, resulting in improved water quality and decreased contamination. By 2019, India declared itself open defecation-free (ODF), contributing to a decrease in waterborne diseases in rural areas, which were previously heavily affected by poor sanitation.

However, as the population continues to grow, ensuring continued improvements in sanitation and access to clean water will require ongoing investment. Population pressures can strain existing infrastructure, and failure to keep up with these demands may reverse the health benefits achieved so far.

2. Increased Water Availability

As the population expands, water demand across various sectors—such as agriculture, industry, and domestic use—grows. This can lead to over-extraction of water resources and worsen water scarcity, especially in already stressed regions.

To meet rising demands, innovative water management strategies are essential. These include techniques such as rainwater harvesting, wastewater recycling, and desalination, which help expand the available water supply. For example, water conservation and reuse programs are gaining traction in cities and rural areas to help alleviate the pressure caused by population growth.

These strategies require large investments, and public acceptance is key for their successful implementation. The challenge is to ensure these practices evolve with the growing population to maintain water security, thus preventing further strain on water resources.

3. Environmental Restoration

Population growth intensifies pressure on natural resources, leading to the degradation of ecosystems that provide essential water resources. The restoration of wetlands, rivers, and aquifers is critical to maintain ecological balance and support biodiversity, which is key for long-term water sustainability.

For instance, the restoration of the Sundarbans mangrove forest in West Bengal not only protected biodiversity, including the Bengal tiger, but also promoted sustainable practices that benefited local communities. Similarly, efforts to restore the Western Ghats in Maharashtra have reversed

deforestation and enhanced the region's water retention capacity.

These projects are vital for sustaining the environment in the face of rising population pressures, but they require consistent investment, management, and long-term planning to ensure their success amidst the increasing demands for water.

4. Economic Benefits

Efficient water management is essential to support the agricultural and industrial sectors, which are both heavily dependent on reliable water supplies. A growing population means greater demand for agricultural production, manufacturing, and urban development, all of which require water.

Water availability can directly influence economic productivity by boosting agricultural yields, supporting industrial operations, and creating employment opportunities in water management sectors.

However, these benefits are only sustainable with continuous investment in water infrastructure and management. As populations grow, the challenge lies in ensuring that water resources are used efficiently and equitably to sustain economic growth.

5. Community Resilience to Water Scarcity

As the population grows and the climate crisis intensifies, communities must adapt to water scarcity. Implementing sustainable water management practices such as water conservation, alternative water sources, and improved water efficiency can enhance resilience against droughts and floods.

A notable example of this is Cape Town's water crisis, where comprehensive water management strategies helped reduce water consumption by 50% and averted the feared "Day Zero," which would have marked the day the city ran out of water.

However, while these practices are successful, the evolving nature of climate impacts and population growth means that long-term adaptation strategies will need to be continuously adjusted to keep pace with changing conditions.

6. Technological Advancements in Water Management

Technological advancements in water treatment and management are playing a key role in addressing the challenges of a growing population. Membrane filtration, advanced oxidation processes, and smart water management systems are improving water quality, reducing waste, and cutting costs.

For example, in Chennai, the implementation of WICER principles (Water and Energy Recovery from Wastewater) led to a 20% increase in water availability, while simultaneously reducing energy consumption in wastewater treatment by 15%.

The adoption of these technologies is crucial in ensuring that water systems are resilient to the pressures of population growth. However, the cost of implementation and

maintenance remains a key challenge, requiring public-private partnerships and community participation to scale these innovations.

Strong Connection Between Water Pollution and Population Growth:

As populations increase, the volume of waste—both domestic and industrial—also grows, leading to greater pollution of water bodies. Increased sewage generation, along with industrial effluents being discharged into rivers, severely compromises water quality, resulting in health risks and ecological damage.

Population growth exacerbates the strain on existing water treatment and sewage infrastructure. In countries like India, where the sewage treatment capacity covers only 37% of the sewage generated, untreated wastewater is frequently released into water bodies, polluting drinking water sources and harming aquatic ecosystems.

More people also mean greater demand for water for drinking, agriculture, and industrial use. Over-extraction, combined with pollution, not only depletes freshwater resources but also deteriorates water quality, creating a vicious cycle of water scarcity and contamination.

The need to manage this growing demand through sustainable practices, such as wastewater recycling, pollution control, and ecosystem restoration, becomes crucial to mitigate the negative effects of population growth on water resources.

Call to Action

For Individuals

- **Educate & Spread awareness:** Promote education programs that focus on the relationship between population growth and water scarcity. Understanding the impact of population on water resources can drive more responsible behaviour and support for conservation initiatives.
- **Reduce Pollution:** Properly dispose of household chemicals and reduce plastic use to prevent contaminants from entering water bodies. Participate in community clean-up drives because they help keep local water sources clean. Reduce water consumption by utilizing water-efficient appliances and fixtures. Practice rainwater harvesting and reuse greywater for non-potable purposes; however, this requires careful planning.
- **Support Policy Change:** Advocate for stronger environmental regulations and sustainable development policies; engage with local representatives, but support initiatives that aim to protect water resources.
- **Engage in Community Action:** Join or form community groups dedicated to water conservation and pollution prevention. Participate in monitoring programs and citizen science projects to contribute to local water management efforts, although these may require substantial commitment. Populations that are actively engaged in conservation efforts are more likely to

adopt sustainable habits and support policies that protect water resources.

- **Demand transparency** and accountability from businesses regarding their environmental practices. Support companies that prioritize sustainability, however, hold polluters accountable because accountability is crucial for progress.

For Governments

- **Population Control Measures:** Implement and support family planning programs to manage population growth. Educating communities about the benefits of smaller family sizes can help reduce the strain on water resources.
- **Resource Allocation:** Ensure equitable distribution of water resources to meet the needs of a growing population. This includes prioritizing water access for essential uses such as drinking, sanitation, and agriculture.

  Implementing strong policies such as enforcing stricter pollution controls and waste management regulations is essential for protecting water resources. It is critical to develop and implement comprehensive water management plans that address both urban and rural needs; however, this must be done with careful consideration of local conditions.

  Encouraging the use of green technologies to enhance water conservation strategies. Supporting research and innovation remains vital, as funding research and development initiatives focused on innovative water management solutions can lead to substantial improvements.

  Encouraging public-private partnerships can drive technological advancements in water treatment and pollution control, thus fostering a more effective response to the challenges at hand.

  Engaging in international collaboration is imperative as well; participating in global initiatives and partnerships aimed at addressing water pollution allows countries to share knowledge, resources and best practices.

  Elevate Public Awareness: Initiate nationwide campaigns to educate citizens regarding the significance of water conservation and pollution prevention. This provision of resources and support for community-led initiatives is essential; however, challenges may arise. Although the intention is clear, engagement can wane, but sustained efforts are crucial because awareness must translate into action.

Conclusion

As the population continues to grow, water pollution becomes an increasingly critical issue that necessitates immediate and collective action from both governments and individuals. The rising number of people puts additional pressure on water resources, making it essential to address pollution effectively. By implementing robust policies, investing in infrastructure, promoting sustainable development, and supporting research, governments can lead the way in protecting our water resources. However, individuals can also make a significant impact by adopting sustainable practices, reducing pollution, and engaging in community action. The synergy between government initiatives and individual actions is essential to address the challenges posed by a growing population. Although the challenges are formidable, we can collectively tackle water pollution, safeguard public health, and ensure a sustainable future for generations to come. The time to act is now. As our population continues to expand, let's unite for clean water and a healthier planet.

EPISODE 5

Protecting Life

Biodiversity Conservation and Population Stabilisation

Episode 5 : Protecting Life

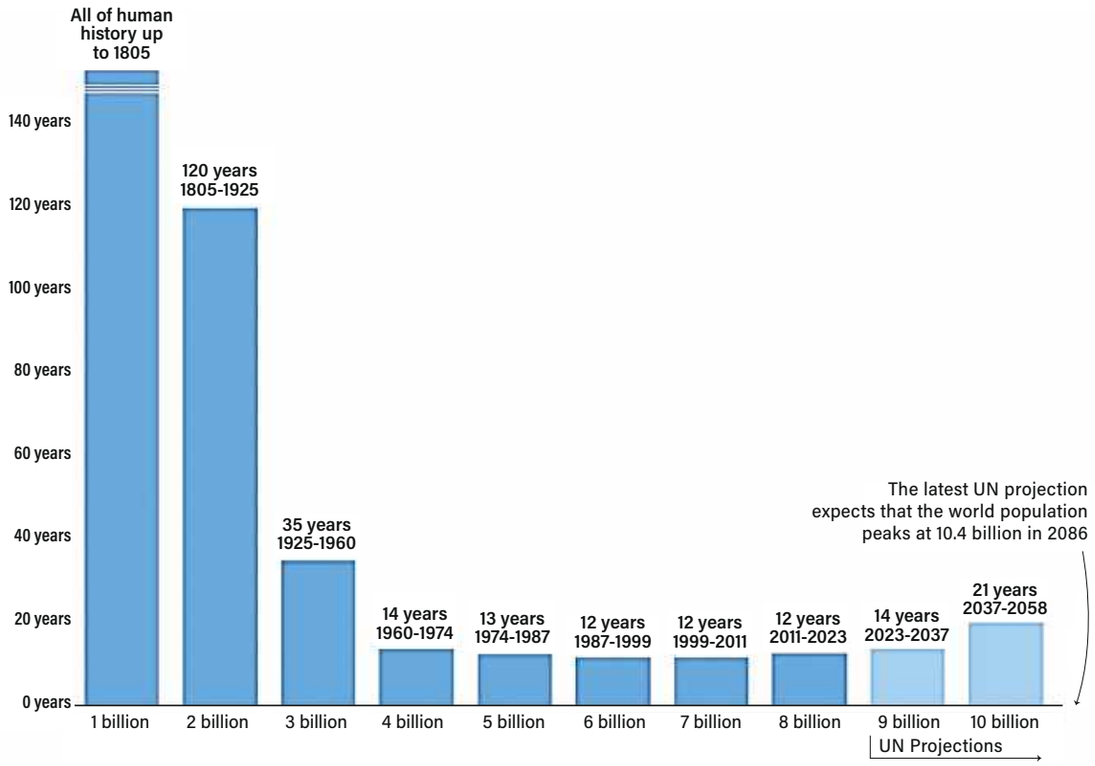
Biodiversity Conservation and Population Stabilisation

Episode Synopsis

The episode delved into the intricate relationship between human population growth and biodiversity loss. It provided a comprehensive overview of how the burgeoning human population is exerting unprecedented pressure on natural ecosystems.

Since the mid-20th century, the global population has experienced an unprecedented surge, growing from approximately 2.6 billion in 1950 to 7.8 billion by 2021[1]. This rapid population increase has necessitated extensive land conversion to meet the rising demands for food, housing, and infrastructure. Between 1962 and 2017, approximately 340 million hectares of new croplands were created globally. This expansion often came at the

Time for the World Population to Increase by One Billion[1]



Note: This is calculated based on the year that the population is one billion larger by the UN's mid-year estimate.
Data sources: History Database of the Global Environment (HYDF); UN World Population Prospects (2022 Reviion); UN Medium Projection (2022 Revision)

1. Max Roser and Hannah Ritchie (2023) - "How has world population growth changed over time?" Published online at OurWorldinData.org. Retrieved from: 'https://ourworldindata.org/population-growth-over-time'

expense of forests, wetlands, and other natural ecosystems, leading to significant habitat destruction. Additionally, around 470 million hectares of natural ecosystems were converted into pastures during the same period. This large-scale land conversion disrupts ecosystems, displaces wildlife, and reduces biodiversity. There has been a catastrophic 73% decline in the average size of monitored wildlife populations over just 50 years (1970-2020)[2].

The greatest threat to biodiversity is not just the sheer number of people, but the increasing per capita consumption, especially in affluent regions. About 10% of the world's population, primarily in affluent regions, consumes 40% of the Earth's biological productivity[3]. Higher standards of living and consumer lifestyles drive the exploitation of natural resources at unsustainable rates. For instance, the demand for meat, dairy, and other resource-intensive products has led to the expansion of agricultural lands and overgrazing, further exacerbating habitat loss.

Affluent regions also contribute significantly to pollution and resource exploitation. Industrial activities, transportation, and urbanization release pollutants into the air, water, and soil, harming wildlife and ecosystems[4]. The extraction of natural resources, such as timber, minerals, and fossil fuel, depletes these resources and often leads to environmental degradation. The cumulative impact of these activities is a decline in biodiversity and the disruption of ecological balance.

Problem Statement

The core problem being discussed is the unsustainable human population growth and its direct and indirect impacts on biodiversity. As the population continues to rise, the demand for food, water, and living space escalates, leading to habitat destruction, overexploitation of resources, and increased pollution. This unsustainable trajectory threatens the delicate balance of ecosystems, resulting in the loss of biodiversity at an alarming rate. Critical ecosystems that provide essential services such as soil fertility, water purification, pollination, and carbon sequestration are being disrupted, endangering the survival of countless species and threatening human well-being. Despite national and global conservation efforts, **nearly 10 million species face extinction, and biodiversity hotspots like the Himalayas, Western Ghats, and Indo-Burma regions are in peril.** The challenge lies in mobilising immediate, collective action to halt biodiversity loss, restore damaged ecosystems, and adopt sustainable development practices to ensure ecological balance and safeguard the future of life on Earth.

1.https://files.worldwildlife.org/wwfcmsprod/files/Publication/file/5gc2qerb1v_2024_living_planet_report_a_system_in_peril.pdf
2.How does the growing global population affect biodiversity? | Royal Society
3.Impact of Affluence and overexploitation of natural resources

Featured Experts

Shri Narendra Modi
Hon. Prime Minister of India

Mr. Praveen Garg
IAS (Rtd.), President - Mobius Foundation

Dr. Ram Boojh
Advisor, Mobius Foundation

Professor C. R. Babu
Professor CEMDE, Dept. of Environmental Studies, Delhi University

Shri Bhupendra Yadav
Hon. Union Cabinet Minister, Environment, Forest and Climate Change

Mr. Afroz Shah
Environmentalist

Mr. Ganesh Rajpurohit
Conservationist

Mr. Y. V. Jhala
Indian Scientist and Conservationist

Mr. Vivek Menon
Executive Director, Wildlife Trust of India

MAIN DISCUSSION POINTS

1. Population as the Primary Driver of Biodiversity Loss:

The rapid increase in human population, especially in regions like India, has led to unsustainable land use practices and destruction of habitats, threatening biodiversity. As population grows, the demand for resources and space escalates, resulting in deforestation, overexploitation, and fragmentation of ecosystems.

- **Dr. Ram Boojh, Advisor, Mobius Foundation:** "Unchecked population growth leads to the overexploitation of resources. Addressing these issues

is essential for ensuring a stable future for both humans and wildlife."

- **Mr. Praveen Garg, IAS (Rtd.), President - Mobius Foundation:** "In India, the high population density, over 400 people per square kilometre, exacerbates habitat degradation and species loss."

2. India's Biodiversity Hotspots under Threat:

India's biodiversity hotspots, including the Western Ghats, Himalayas, Northeastern India, and the Andaman and Nicobar Islands, face increasing threats from human activity and climate change, threatening both terrestrial and marine ecosystems.

- **Shri Narendra Modi, Prime Minister of India:** "We now have the opportunity to fix the centuries-old link of biodiversity that was broken decades ago. Today, the cheetah has returned to Indian soil."
- **Mr. Vivek Menon, Wildlife Trust of India:** "Project Cheetah is a monumental conservation effort requiring a long-term perspective. Conservation is a gradual process needing decades of consistent effort, planning, and adaptive management."

3. India's Commitment to Biodiversity:

India has committed to global initiatives like the 30x30 pledge, aiming to protect 30% of the country's land and marine areas by 2030, reflecting its dedication to reversing biodiversity loss.

- **Mr. Praveen Garg, IAS (Rtd.), President - Mobius Foundation:** "India's commitment to biodiversity conservation is evident through efforts like Project Tiger and the establishment of wildlife corridors."

4. The Role of Protected Areas:

Protected areas such as national parks and wildlife sanctuaries are crucial in safeguarding India's biodiversity. These areas help conserve iconic species and provide refuge for numerous others under threat.

- **Shri Bhupendra Yadav, Union Cabinet Minister:** "Credible action and optimism are crucial in addressing global challenges, including biodiversity conservation. Sustainable practices, such as agroforestry and wildlife corridors, are essential."
- **Mr. Ganesh Rajpurohit, Conservationist:** "Such sanctuaries are great examples of coexistence and ecological balance. Community involvement fosters awareness and compassion for wildlife."

5. Habitat Destruction, Resource Overuse, and Pollution:

Habitat destruction driven by urbanization and agriculture, combined with overexploitation of natural resources and pollution, is a leading cause of biodiversity loss. The effects are compounded by the growing human population, which drives industrial activity and increased pollution.

- **Mr. Afroz Shah, Environmentalist:** "Plastic pollution is a major threat, with millions of tons entering water bodies annually, affecting marine species and human health."
- **Mr. Y. V. Jhala, Indian Scientist:** "Biodiversity loss undermines essential ecosystem services, jeopardizing food security, health, and livelihoods."

6. Climate Change and Declining Biodiversity:

Climate change, driven by human activities, is altering ecosystems and threatening species. Rising global temperatures, habitat loss, and changing precipitation patterns are some of the significant impacts on biodiversity, particularly in biodiversity hotspots like the Himalayas and the Western Ghats.

- **Professor C. R. Babu, Delhi University:** "Biodiversity is the foundation of ecosystem functioning. The loss of biodiversity disrupts crucial services such as nutrient cycling, pollination, and climate regulation."
- **Dr. Ram Boojh, Advisor, Mobius Foundation:** "Climate change exacerbates biodiversity loss, altering species distributions and threatening survival."

7. Invasive Species and Population Growth:

The rise in global trade and travel, driven by population growth, has facilitated the spread of invasive species, which threaten native species and ecosystems. This further accelerates biodiversity loss and ecosystem imbalance.

- **Mr. Y. V. Jhala, Indian Scientist:** "We are in the midst of the sixth mass extinction, largely driven by human activities."
- **Mr. Ganesh Rajpurohit, Conservationist:** "Community involvement in these initiatives fosters awareness and compassion for wildlife, encouraging shared responsibility for biodiversity."

Case Studies

National

1. **The Western Ghats**, a UNESCO World Heritage site and one of the world's eight "hottest hotspots" of biological diversity, stretches over 1,600 km along the western coast of India. Overpopulation significantly impacted this region through deforestation, driven by the need for more agricultural land and urban areas to support the growing population. This deforestation has led to habitat loss and fragmentation, isolating wildlife populations and making it difficult for species to survive and reproduce. However, conservation efforts have yielded significant positive impacts. Establishing protected areas like national parks and wildlife sanctuaries has helped safeguard critical habitats and promote biodiversity. For instance, the population of the endangered Nilgiri Tahr has shown signs of recovery due to stringent protection measures. Community involvement in conservation initiatives has also been effective, with programs like Joint Forest Management engaging locals in sustainable practices[5].
2. **The Sundarbans**, the largest mangrove forest in the world located in the delta region of the Padma, Meghna, and Brahmaputra River basins, confronts major challenges

5. Forest Survey of India, 2021

as a result of overpopulation. The growing population in surrounding areas has led to increased human encroachment into the forest for resources such as wood, fish, and honey. Overpopulation also contributes to climate change through increased greenhouse gas emissions, leading to rising sea levels that threaten the Sundarbans. This unique ecosystem supports diverse wildlife, including the Bengal tiger, which was at risk due to habitat loss and increased human-wildlife conflicts. Conservation efforts have yielded significant positive impacts. Initiatives like Project Tiger have been crucial in protecting the Bengal tiger population and preserving the overall ecosystem. Establishing protected areas and implementing sustainable resource management practices have helped reduce human encroachment and promote biodiversity.[6]

3. **The Himalayan region**, known for its unique and fragile ecosystem that includes diverse flora and fauna, is under considerable pressure due to the growing population. To meet the demands of a growing population, forests are being cleared for agriculture, settlements, and infrastructure development, leading to deforestation. Increased livestock numbers due to population growth result in overgrazing, which degrades the land and reduces its ability to support wildlife. Overpopulation also contributes to climate change through increased greenhouse gas emissions, exacerbating issues like soil erosion, and increased vulnerability to natural disasters such as landslides and floods. According to the International Centre for Integrated Mountain Development (ICIMOD), the Himalayan region has lost approximately 15% of its forest cover over the past two decades, highlighting the severe impact of human activities on this critical ecosystem[7]. Initiatives like community-based forest management have empowered local communities to actively participate in forest conservation and sustainable resource management. Afforestation drives have successfully restored degraded areas, enhancing biodiversity and ecosystem services. Projects focused on renewable energy development and sustainable agriculture practices are addressing climate change impacts, promoting ecological balance. Additionally, conservation programs have helped protect iconic species like the snow leopard and red panda, ensuring their survival.[8]

International

The Amazon Rainforest, the world's largest rainforest, is experiencing deforestation at an alarming rate due to logging, agriculture, and mining. This deforestation has significant implications

6. https://projecttiger.ntca.gov.in/about-us/
7. International Centre for Integrated Mountain Development (ICIMOD), 2021
8. https://www.undpopenplanet.org/projects/Securing_livelihoods_Conservation_Sustainable_Use_and_Restoration_of_high_range_Himalayan_Ecosystems_SECURE_Himalayas/

for global biodiversity and climate regulation, as the Amazon is home to approximately 10% of the world's known species and plays a crucial role in carbon sequestration. According to the Brazilian National Institute for Space Research (INPE), the Amazon lost around 10,476 square kilometres of forest cover in 2021 alone, highlighting the severe impact of human activities on this critical ecosystem (INPE, 2021)[9]. Conservation efforts in the Amazon Rainforest have yielded significant positive impacts. Initiatives like the Amazon Region Protected Areas (ARPA) program have been instrumental in establishing and managing protected areas, covering millions of hectares to safeguard biodiversity.

Outcome and Impact

The episode underscored the urgent need for sustainable development practices to mitigate the impacts of population growth on biodiversity. It emphasized the importance of conservation efforts, habitat restoration, and the implementation of policies that balance human needs with environmental protection. The discussion also highlighted the role of education and awareness in fostering a culture of sustainability.

1. **Sustainable Development Practices:** The urgent need for sustainable development practices was emphasized to mitigate the adverse effects of population growth on biodiversity. This includes adopting agricultural practices that do not harm the environment, promoting renewable energy sources, and ensuring that urban development is planned with ecological considerations in mind. According to the United Nations, sustainable development practices are essential to achieving the Sustainable Development Goals (SDGs) and ensuring a balance between human needs and environmental protection[10].
2. **Conservation Efforts:** The importance of conservation efforts was stressed, including the protection of endangered species and their habitats. This involves creating and maintaining protected areas, enforcing anti-poaching laws, and supporting conservation programs. The International Union for Conservation of Nature (IUCN) reports that effective conservation efforts have led to the recovery of several species, but many others remain at risk due to habitat loss and human activities[11].
3. **Habitat Restoration:** The episode highlighted the need for habitat restoration to reverse the damage caused by deforestation, pollution, and other human activities. This includes reforestation projects, wetland restoration, and the rehabilitation of degraded

9. Brazilian National Institute for Space Research (INPE), 2021
10. United Nations, 2020
11. IUCN, 2021

ecosystems. The World Wildlife Fund (WWF) notes that habitat restoration is crucial for maintaining biodiversity and ecosystem services, which are vital for human well-being[12].

4. **Policy Implementation:** The implementation of policies that balance human needs with environmental protection was emphasized. This includes regulations on land use, pollution control, and resource management. Effective policies can help reduce the environmental footprint of human activities and promote sustainable development. The Environmental Protection Agency (EPA) highlights the importance of policy measures in achieving environmental sustainability and protecting natural resources[13].
5. **Education and Awareness:** The role of education and awareness in fostering a culture of sustainability was underscored. Educating the public about the importance of biodiversity and the impacts of overpopulation can lead to more environmentally conscious behaviours and support for conservation initiatives. The United Nations Educational, Scientific and Cultural Organization (UNESCO) emphasizes that education for sustainable development is key to empowering individuals to make informed decisions and take responsible actions for environmental integrity[14].

Call to Action

Individuals

1. **Reduce Consumption:** Individuals can adopt sustainable consumption habits to lessen their environmental impact. This includes reducing waste, recycling, and choosing eco-friendly products. According to the United Nations Environment Programme (UNEP), sustainable consumption and production can significantly reduce environmental degradation and resource depletion.
2. **Support Conservation:** Participation in local conservation initiatives and supporting organizations working to protect biodiversity are crucial. The World Wildlife Fund (WWF) emphasizes that community involvement in conservation efforts can lead to more effective and sustainable outcomes.
3. **Educate and Advocate:** Raising awareness about the importance of biodiversity and advocating for policies that promote environmental sustainability are essential actions. Education and advocacy can drive public support for conservation measures and influence policy decisions. The United Nations Educational, Scientific and Cultural Organization (UNESCO) highlights the role of education in fostering a culture of sustainability (UNESCO, 2021).

12. WWF, 2021
13. EPA, 2020
14. UNESCO, 2021

Government

1. **Implement Policies:** Governments should enforce regulations that protect natural habitats and promote sustainable land use practices. Effective policies and frameworks like Forest Stewardship Council (FSC), CBD and their implementation are critical for conserving biodiversity and ensuring sustainable development.
2. **Invest in Conservation:** Allocating resources for the conservation and restoration of critical ecosystems is vital. Government investment in conservation projects like Project Tiger, can help preserve biodiversity and restore degraded habitats.
3. **Promote Sustainable Development:** Encouraging sustainable agricultural practices, renewable energy, and green infrastructure can help balance economic growth with environmental protection.

Conclusion

The episode on the impacts of increasing population on biodiversity provided a sobering look at the challenges posed by human population growth on biodiversity. It underscored that ensuring a sustainable future for all life forms on Earth requires both individuals and governments to adopt sustainable practices and support conservation efforts. By reducing consumption, participating in local conservation initiatives, and advocating for environmental policies, individuals can make a significant difference. Meanwhile, governments must implement and enforce regulations, invest in conservation projects, and promote sustainable development practices. Together, these efforts can help preserve the planet's rich biodiversity for future generations.

EPISODE 6

Breaking the Cycle

Overconsumption, Waste and the Need for Population Stabilisation

Episode 6 : Breaking the Cycle

Overconsumption, Waste and the Need for Population Stabilisation

Episode Synopsis

This episode delves into the critical issue of waste management and environmental degradation exacerbated by overpopulation. The rapid increase in population has led to a significant rise in waste generation, straining existing waste management systems and causing severe environmental impacts. India generates approximately 26,000 tons of plastic waste daily, contributing to the global plastic pollution crisis[1].

This staggering amount of waste poses a significant challenge for waste management authorities. Major cities like Delhi and Mumbai are grappling with massive garbage dumps. For instance, the Ghazipur landfill in Delhi has grown to over 65 meters high, earning it the nickname "Mount Everest of trash." These waste dumps emit harmful gases such as methane and carbon monoxide, which contribute to air pollution and pose serious health risks to nearby residents. The proliferation of waste dumps near urban areas leads to the emission of toxic gases, including methane, a potent greenhouse gas that contributes to climate change. Carbon monoxide, another harmful gas, can cause respiratory problems and other health issues. The leachate from these dumps can contaminate groundwater, further exacerbating environmental degradation.

To address the waste crisis, the episode emphasizes the importance of transitioning to a circular economy. This approach focuses on reducing waste, reusing materials, and recycling products to create a sustainable system.

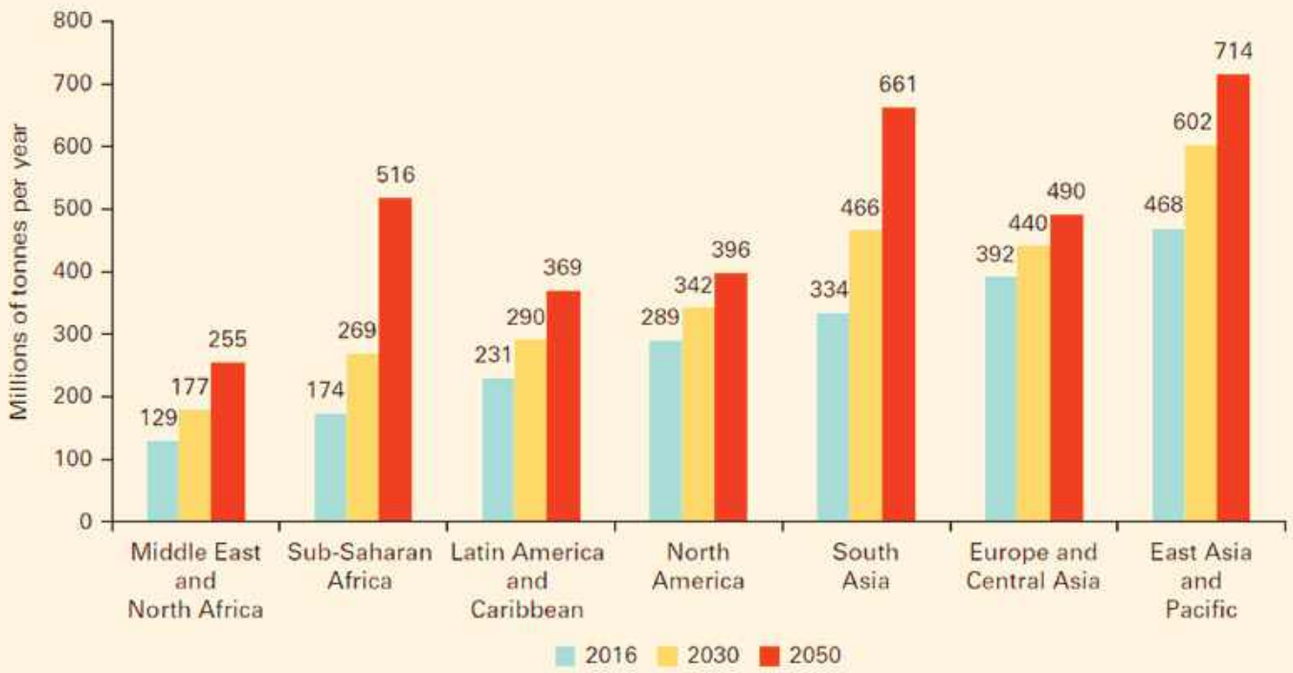
One notable initiative is the Muskan Jyoti Sansthan project in Ghaziabad, where waste is transformed into compost, demonstrating a practical solution to waste management. The narrative underscores the urgency of balancing population growth with resource management to ensure a liveable future for all. It advocates for collective awareness and action to address overpopulation and promote sustainable practices. By adopting a circular economy and implementing effective waste management strategies, we can reduce the environmental impact and create a healthier, more sustainable world.

1. CPCB | Central Pollution Control Board Report, 2022

Problem Statement

In 2020, the world generated approximately 2.24 billion tonnes of solid waste, averaging 0.79 kilograms per person per day. By 2050, annual waste generation is projected to rise by 73%, reaching 3.88 billion tonnes. India alone generates 160,038.9 tons of solid waste per day, with only about 50% undergoing treatment, leaving a substantial portion unaccounted for. This inadequate waste management is evident in the growing garbage mountains near major cities such as Delhi, Faridabad, and Gurugram. These sites emit harmful gases, including methane and carbon monoxide, and contribute significantly to environmental degradation. Without addressing these issues, the future looks bleak, with waste generation expected to double the population growth by 2050.

Projected waste generation, by region (millions of tonnes/year)



(Source: The World Bank, Trends in Solid Waste Management)

Speakers

Mr. Praveen Garg
IAS (Rtd.), President - Mobius Foundation

Mr. Mevalal
Founder,
Muskan Jyoti Sansthan

Dr. Ram Boojh
Advisor, Mobius Foundation

Mr. Ashwini Kumar Choubey
Hon. Minister of State for Consumer Affairs, Food and Public Distribution

Mr. António Guterres
Secretary-General,
United Nations

MAIN DISCUSSION POINTS

1. Waste Generation by Populations in India

India faces a major challenge in waste generation, with every individual contributing up to 600 grams of waste per day. This adds up to millions of tons annually, significantly stressing the country's waste management systems. The Ministry of Housing and Urban Affairs reported in 2019 that India generates a staggering 26,000 tons of plastic waste every day, including common items like shampoo bottles, milk pouches, and single-use plastics, which have infiltrated even rural areas.

Mr. Ashwini Kumar Choubey, Hon. Minister of State for Consumer Affairs, Food and Public Distribution, highlighted, *"When population increases, it will result in increased consumption. The balance between resources and our population must be maintained. Otherwise, it will lead to a crisis in food, farming, textiles; everything."* This observation underscores the direct correlation between rising population numbers and escalating waste generation.

Dr. Ram Boojh, Advisor at Mobius Foundation, further stressed, *"Increasing population levels heighten the demand for essential resources like food, clothing, and housing, straining Earth's finite resources. This surge also leads to*

more waste generation, overwhelming waste management systems and causing land, water, and air contamination, which poses health risks to humans and wildlife." His words highlight the overwhelming strain on both the environment and waste management infrastructure caused by overpopulation.

The improper disposal of plastic waste contributes to severe environmental pollution, with plastics clogging rivers, drains, and oceans. Moreover, the degradation of these plastics leads to soil and water contamination, impacting both human health and wildlife. Addressing this challenge requires better infrastructure, widespread public awareness, and active engagement across all sectors of society—government, businesses, and individuals alike.

2. Impending Crisis: "Garbage Islands"

A study conducted in September 2022 warned that over 600,000 villages could become "garbage islands" if action is not taken urgently. Major cities such as Delhi, Mumbai, and Faridabad are already grappling with massive garbage dumps, including those in Ghazipur, Okhla, Bandhwari, and Deonar. These dumps continue to grow, creating towering mountains of waste that are visible from miles away. These vast waste deposits are posing grave environmental and health risks, as decomposing garbage emits toxic gases like methane and leachate, which pollute the soil and groundwater.

Mr. António Guterres, Secretary-General of the United Nations, stated, *"Overconsumption is central to the triple planetary emergency of climate change, biodiversity loss, and pollution."* His remark highlights the critical link between overconsumption and the ever-growing mountain of waste threatening urban spaces. The lack of waste segregation and recycling infrastructure exacerbates the problem, and if left unchecked, the dumpsites will continue to expand, potentially engulfing nearby communities.

Dr. Boojh echoed this concern, stating, *"As population growth continues, waste management systems will be overwhelmed unless we change our approach to consumption. Waste is no longer a problem confined to urban areas but is spreading even to rural regions, threatening the entire ecosystem."*

Addressing this crisis will require immediate steps to implement sustainable waste management practices, with a focus on reducing waste generation, improving collection systems, and investing in recycling technologies.

3. Environmental and Health Hazards

The environmental and health impacts of unmanaged waste are profound. Urban dumps emit harmful gases like methane, hydrogen sulfide, and carbon monoxide, which contribute to air pollution and have serious health implications. Methane is a potent greenhouse gas that accelerates climate change, while hydrogen sulfide and carbon monoxide are linked to respiratory issues and other health problems.

Mr. Mevalal, Founder of Muskan Jyoti Sansthan, emphasized, *"Urban waste reduction is crucial to prevent cities from being overwhelmed by their own waste."*

With urban areas generating over 2 billion tons of municipal solid waste annually, waste management becomes not just an environmental issue, but a health and socio-economic one as well. Improper waste disposal can lead to diseases like dengue, cholera, and respiratory illnesses due to air pollution and water contamination.

Mr. António Guterres added, *"The industrialization and consumerism driving overconsumption lead to unsustainable resource use and environmental degradation."* Overconsumption leads to the depletion of natural resources and pollution, pushing ecosystems to their breaking point. As a result, the environmental crisis intensifies, threatening the delicate balance of our planet's systems.

Dr. Boojh further highlighted the grave consequences, saying, *"Overconsumption is a significant driver of climate change, biodiversity loss, and pollution, exacerbating the environmental crisis. The excessive use of natural resources and the generation of waste beyond the environment's capacity to absorb it leads to habitat destruction and loss of biodiversity."*

Addressing these environmental and health risks requires a multifaceted approach, including reducing waste generation, improving waste management systems, and shifting towards sustainable consumption patterns.

4. Circular Economy as a Solution

The concept of the circular economy offers a promising solution to the waste crisis. By focusing on the principles of reducing, reusing, regenerating, and recycling, a circular economy aims to create a closed-loop system where waste is minimized, and resources are continuously reused and recycled. This is in stark contrast to the traditional linear economy, where products are made, used, and discarded.

The Muskan Jyoti Sansthan project in Ghaziabad is a prime example of circular economy principles in action. The project converts organic waste into compost, thereby reducing landfill waste while producing valuable products for agriculture. Other initiatives, such as repair and refurbishment services, recycling programs, and product design for longevity, highlight how circular practices can mitigate the environmental impact of waste and promote resource efficiency.

In the words of Mr. Mevalal, *"Effective waste management systems and public awareness about reducing, reusing, and recycling are essential to address this challenge."* This requires collaboration among governments, businesses, and consumers to create a sustainable system that benefits both the economy and the environment.

5. Population Growth and Resource Strain

As population numbers rise, the strain on natural resources intensifies. The expansion of agricultural land to meet the growing demand for food often leads to deforestation, soil degradation, and habitat destruction. These activities, in turn, generate substantial waste and contribute to land and water pollution.

Mr. Ashwini Kumar Choubey remarked, *"India's population surpassing 1.4 billion places immense pressure on resources,*

infrastructure, and the environment. Uncontrolled population growth could have catastrophic impacts on quality of life and sustainability." Population growth also results in increased industrial activity, generating hazardous waste that contaminates ecosystems and exacerbates global environmental issues such as climate change and biodiversity loss.

Dr. Ram Boojh added, *"The increasing demand for food, housing, and infrastructure, driven by population growth, leads to the overexploitation of natural resources and increased waste generation. This creates a vicious cycle of resource depletion and environmental degradation, which can only be broken through sustainable development practices."*

To address these challenges, sustainable development practices are essential. This includes promoting family planning, improving resource efficiency, investing in renewable energy, and adopting waste reduction practices.

6. Agenda Sustainability Campaign

The India Today Group and Mobius Foundation have launched the Agenda Sustainability Campaign to raise awareness about the negative impacts of population growth on sustainability. The campaign aims to educate the public about the importance of adopting sustainable living practices, conserving resources, and reducing waste.

Mr. Ashwini Kumar Choubey emphasized, *"The balance between our growing population and the available resources must be carefully managed to avoid a catastrophic crisis."* Through this campaign, the goal is to inspire collective action by highlighting the interconnectedness of population growth, resource consumption, and environmental degradation. Public service announcements, educational programs, and community engagement are key components of this effort to create a culture of sustainability across all sectors of society.

7. Urgency of Addressing Population Growth

Managing population growth is critical to ensuring food security, environmental sustainability, and balanced development. Rapid population growth leads to an increased demand for essential resources, straining already limited resources like water, energy, and agricultural land.

Mr. António Guterres cautioned, *"The rising pressure of population growth is amplifying environmental degradation and accelerating climate change."* Unchecked growth can lead to resource shortages, greater competition for essential goods, and more intense environmental crises.

Mr. Choubey further noted, *"We must address the increase in population in a way that ensures sustainability and prevents future crises."* Measures like family planning, access to reproductive health services, and women's empowerment are critical in managing population growth while ensuring ecological balance.

Dr. Boojh also pointed out, *"If we don't address population growth along with consumption patterns, we risk exhausting our planet's resources and escalating the global environmental crisis."*

8. Future Implications and Sustainable Pathways

Without immediate and collaborative action, the twin challenges of overconsumption and population growth will result in severe ecological and societal crises. The accumulation of waste, depletion of resources, and environmental degradation could worsen climate change, threatening the planet's ecosystems and biodiversity.

Mr. António Guterres emphasized the importance of a sustainable future: *"Overconsumption and unsustainable resource use are eroding the foundations of our planet's health, pushing ecosystems to their breaking point."* Collaborative efforts, innovation, and education are crucial to shifting towards more sustainable practices. This includes embracing circular economies, reducing consumption, and ensuring policies that protect natural resources.

Mr. Ashwini Kumar Choubey highlighted, *"Every individual must recognize their role in this global challenge. By adopting responsible consumption, reducing waste, and participating in environmental preservation, we can achieve a balanced coexistence with nature."*

Dr. Boojh added, *"To avoid catastrophic outcomes, it is imperative that we act now to address both population growth and waste generation. By adopting sustainable practices, we can ensure a future where development and environmental preservation go hand in hand."*

Case Studies

International:

Philippines, Quezon City leads the fight against plastic pollution through sari-sari store-based refill hubs: Quezon City, in partnership with Greenpeace Philippines and Impact Hub Manila, launched "Kuha sa Tingi" (Take in Small Portions) to combat plastic pollution through community-based refill hubs. Piloted in 30 "Tindahan ni Ate Joy" sari-sari stores, the initiative allowed consumers to refill household products like liquid detergent and dishwashing liquid using reusable containers, reviving the traditional Filipino "tingi" culture of buying in small quantities.

This project addressed the plastic waste crisis in the Philippines, where over 164 million sachets are consumed daily. "Kuha sa Tingi" provided an affordable, eco-friendly alternative, promoting a circular economy by reducing single-use plastics and encouraging zero-waste systems.

Quezon City demonstrated the potential of reuse and refill systems to benefit both consumers and small businesses. The initiative avoided over 50,000 sachets, increased consumer savings by 201%, and boosted profits for store owners. It also fostered greater environmental responsibility and inspired similar initiatives in other cities.

National:

Waste Management in Indore, India

Overview of Indore's Waste Management Journey: Indore, a city in Madhya Pradesh,

India, has emerged as a pioneer in waste management and cleanliness, becoming the cleanest city in India for several consecutive years, according to the Swachh Survekshan rankings by the Ministry of Housing and Urban Affairs (MoHUA). The city's success in waste management is attributed to several innovative approaches, citizen participation, and government initiatives.

Key Statistics and Facts:

1. **Cleanliness Ranking:**

- In 2020, Indore ranked India's cleanest city for the fourth consecutive year in the Swachh Survekshan rankings, a national cleanliness survey.
- The city retained its top position due to its efficient waste management practices and community engagement.

2. **Waste Generation:**

- Indore generates around 650-700 metric tons of waste per day, with approximately 400-450 metric tons of waste being segregated at the source.
- As of the last reported figures, Indore's per capita waste generation is about 400 grams per person per day.
- The city has a population of nearly 3 million, and its waste management system caters to this large urban population, managing solid waste from households, commercial establishments, and industrial sources.

3. **Segregation and Collection:**

- A major success in Indore's waste management system is the segregation of waste at the source. Indore is the first city in India to achieve a 100% waste segregation rate at the household level.
- The waste is segregated into three categories: wet waste, dry waste, and hazardous waste.
- Door-to-door collection of waste is carried out by over 1,000 workers using more than 800 vehicles. The collection is efficient, ensuring that waste is segregated and transported to the appropriate facilities for further processing.

4. **Processing and Recycling:**

- Indore has set up a world-class waste processing plant in the city, where waste is treated, recycled, and converted into useful products like compost and biogas.
- Wet waste is converted into compost at Kompost Plant with a daily capacity of around 250 tons.
- Dry waste is sorted, and recyclables like plastic, glass, and metals are sent for recycling.
- Indore has also adopted a waste-to-energy plant that processes around 12-15% of the city's waste to produce biogas.

5. **Public Participation:**

- One of the most critical aspects of Indore's waste management system is community participation. The local administration has taken a comprehensive approach by involving citizens, schools, and various community groups in the campaign for cleanliness and waste segregation.
- The city conducted a mass awareness campaign that included posters, public meetings, and events to educate residents about the importance of waste segregation.

- A unique feature of Indore's approach is the citizen reporting app, where residents can report problems like open dumping or waste not being collected. This system ensures that the authorities are held accountable and can act on complaints in real-time.

6. Waste-to-Wealth Model:

- Indore has effectively implemented the 'Waste to Wealth' initiative by transforming waste into valuable products.
- The city produces compost and biogas from organic waste, which is sold to farmers and industries, contributing to the city's economy.
- Indore also produces bricks from plastic waste and has adopted innovative practices to recycle materials such as e-waste and construction debris.

7. Impact on the Environment:

- Reduction in Landfills: Indore's efficient waste management system has led to a significant reduction in landfill use. Previously, Indore had a massive landfill near the city, but today, the waste management practices have minimized the reliance on landfills.
- The city's approach has also led to a marked reduction in air and water pollution due to the management of waste that would otherwise have been dumped openly.
- Greenhouse gas emissions have been reduced as a result of waste processing through composting, biogas production, and recycling, leading to a more sustainable model for managing urban waste.

8. Financial and Social Benefits:

- Indore has created numerous job opportunities through its waste management initiatives. Over 1,000 workers are employed in door-to-door waste collection, processing, and recycling plants.
- The city also generates revenue from selling compost, recycled materials, and biogas, turning waste management into an economically viable sector.

Alappuzha, Kerala successfully implemented a decentralized system for managing solid waste, popularly referred to as the 'Alappuzha Model'. The Alappuzha Municipal Council (AMC) has set itself apart through its effective source-level waste segregation in conjunction with decentralized waste management. The shift to decentralized solid waste management was not simply a matter of administrative procedure; it required a determined initiative to alter the waste management habits of the populace and to process waste at its source. The Alappuzha model of waste management has since been recognized as a model that can be replicated for decentralized solid waste management. By minimizing pollution, the incidence of waterborne diseases has been curtailed, leading to improved overall health within the Alappuzha community. For its sustainable practices in waste management, Alappuzha was acknowledged by the United Nations Environment Programme in 2017.

Pune, an initiative by The Pune Municipal Corp (PMC): Biogas as Initiative - Solution to food waste with the bonus of eco-fuel. The Pune Municipal

Corp (PMC) has taken an initiative to dispose waste through multiple solutions that follow the 4R principle. A part of this is to treat food waste generated by bulk users separately, not only to reduce and recycle waste but to recover valuable energy by converting it into valuable biofuel. The waste processing plant include odourless and noiseless operation with zero discharge, which is essentially based on the anaerobic digestion system with water-based cleaning, scrubbing, and compression system that converts the organic waste slurry into compressed biogas (CBG). By-products generated from the process are organic fertilizers that replace chemical fertilizers for farming. Compressed Biogas (CBG) produced at the processing plant marketed to institutional clients to replace conventional energy - LPG, diesel etc.

Outcome and Impact

Addressing Population Growth and Waste Generation

The episode highlighted how population intensifies the challenges of waste management, food security, and housing. It illustrated the compounding impact of overconsumption and population growth on natural resources and environmental degradation.

The episode also shed light on the alarming scale of waste generation in India, with the nation generating 26,000 tons of plastic waste per day. Highlighting the penetration of plastic waste into rural areas, the hazardous impact of urban dumps, the release of toxic gases like methane and hydrogen sulphide it established the link between overconsumption and the triple planetary crisis of climate change, biodiversity loss, and pollution.

Inspiring Action for Sustainable Development

The episode reinforced the idea that immediate, collaborative efforts are essential to mitigate waste mismanagement and uncontrolled population growth, underscoring the necessity of addressing population growth to ensure food security, balanced development, and environmental sustainability.

By highlighting successful initiatives like the Muskan Jyoti Sansthan project, the episode demonstrated the transformative potential of a circular economy. It also stressed the need for collaboration between governments, communities, and organisations to implement effective waste management policies and sustainable practices.

Call to Action

Personal Responsibility:

- Individuals must take proactive steps to reduce waste and consumption. Simple yet impactful actions, such as recycling, composting, and minimizing single-use plastics, can lead to significant reductions in waste generation.
- By making conscious choices in daily

life, individuals play an essential role in reducing the environmental footprint and contributing to a more sustainable world.

Collaboration for Change:

- Governments, along with local communities, must work together to create and implement effective policies and practices aimed at sustainability. This includes investing in waste management infrastructure, fostering public education, and enforcing regulations to limit waste production.
- Collaboration between all sectors of society is key to creating long-lasting, impactful solutions to the waste crisis and achieving environmental sustainability.

Community Engagement:

- Engaging communities in waste management efforts is vital for success. When people take ownership of their surroundings, it fosters a shared sense of responsibility that accelerates positive environmental changes.
- By working together, communities can drive sustainability efforts, improving waste management systems and creating more livable spaces for future generations.

Collective Responsibility:

- Addressing the waste crisis requires collective action. The call for change emphasizes both individual responsibility and the power of communities working in unison to promote sustainable practices and reduce consumption.
- Sustainable living begins with small, individual actions. By embracing practices like reducing waste, reusing, and recycling, we can protect the planet, improve quality of life, and create a healthier future for all.

For Governments:

- **Develop and Enforce Comprehensive Waste Management Policies:** Governments must prioritize creating and enforcing policies aimed at reducing plastic waste, improving recycling systems, and managing landfill emissions to combat pollution and safeguard public health.
- **Support Circular Economy Initiatives:** Policymakers should encourage and invest in models like the Muskan Jyoti Sansthan project that promote the principles of reduce, reuse, regenerate, and recycle. These initiatives can help transform waste management into a sustainable resource management system on a larger scale.

For Individuals:

- **Adopt Sustainable Daily Practices:** Every person can make a difference by minimizing waste generation, reusing products, and recycling materials. Simple changes, such as cutting back on single-use plastics and composting organic waste, can collectively lead to a positive environmental impact.
- **Engage in Awareness Campaigns:** Individuals should actively participate in initiatives to raise awareness about the consequences of overconsumption and the need for sustainable

living. By spreading knowledge and encouraging others to make environmentally conscious choices, we can build a strong, unified effort to ensure a healthy and liveable planet for future generations.

Conclusion

Overconsumption, waste generation, and rapid population growth are intricately linked challenges that pose significant threats to global sustainability. As populations grow, natural resources are strained, increasing waste, environmental degradation, and pollution. Urban areas are overwhelmed with garbage, highlighting the need for sustainable waste management. The triple planetary emergency—climate change, biodiversity loss, and pollution—stems from unchecked consumption, necessitating circular economy principles: reducing, reusing, regenerating, and recycling.

Addressing these issues requires systemic reforms by governments and collective responsibility from individuals. Policies promoting sustainable waste management, regulating population growth, and incentivizing green technologies are crucial. Individuals must adopt eco-friendly habits, reduce consumption, and support awareness campaigns.

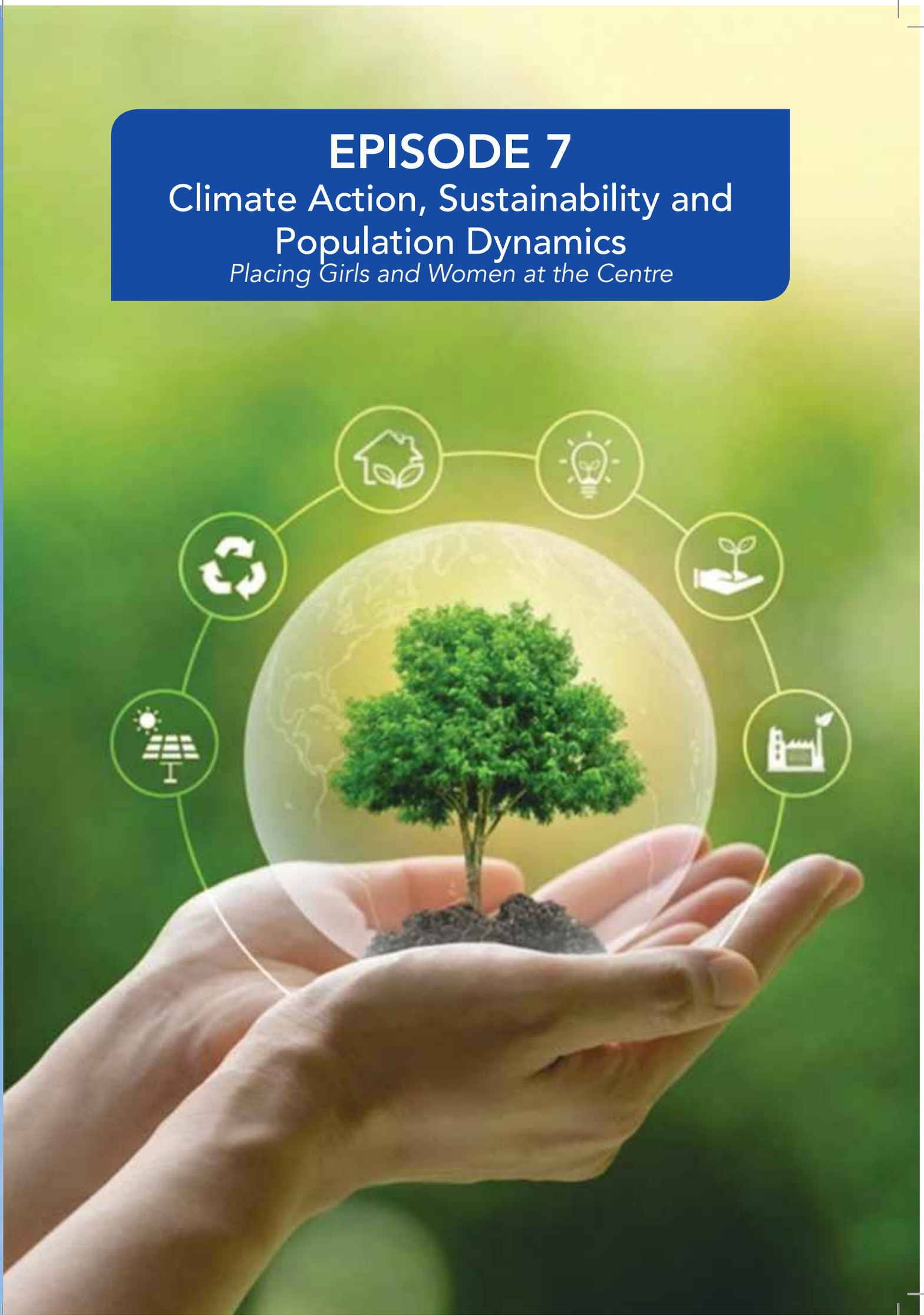
These challenges present an opportunity for transformative change. By balancing development with environmental conservation and fostering collaboration across all sectors, humanity can create a sustainable future that preserves the planet's resources for generations.


THERE'S NO
PLANET B

EPISODE 7

Climate Action, Sustainability and Population Dynamics

Placing Girls and Women at the Centre



Episode 7 : Climate Action, Sustainability and Population Dynamics

Placing Girls and Women at the Centre

The International Conference on Sustainability Education (ICSE) is an annual event organised by Mobius Foundation with the objective of providing a global platform for world dignitaries, and intellects to address the current and emerging sustainability challenges and a need for Education for Sustainability (ESD), Climate Change Education (CCE) and Environmental Education (EE) in the current course curriculum. It is organised in partnership with key environmental organisations, including UNESCO, UNEP, Centre for Environment Education (CEE), Foundation for Environmental Education (FEE, Copenhagen), The Climate Reality Project India, The Energy and Resource Institute (TERI), WWF India, TERRE Policy Centre etc.

After the opening ceremonials, the conference delved into pertinent discussions consisting of 8 plenary and 20 thematic parallel sessions focussing on climate and sustainability. The session on LIFE talked about the importance of changing our lifestyles to protect the environment, emphasising learning from different fields and changing behaviours. The crucial role of new sustainability ventures that focus on practical solutions, creating value, and working together was another important session. A special plenary session highlighted the winners of the Youth4Earth campaign and young professionals.

As part of the Mobius Foundation's year-long campaign, VIRAM: Agenda Sustainability, the conference also showcased a plenary on the campaign and population stabilisation.

Episode Synopsis

The first day of ICSE 2023 featured a pivotal special plenary on population stabilisation, a core focus of Mobius Foundation's year-long campaign VIRAM: Agenda Sustainability, conducted in collaboration with the India Today Group. This dynamic session was broadcast on television as the seventh episode of the VIRAM series, emphasised the critical intersection of population growth and sustainability.

The plenary included a compelling fireside chat with Mr. Pradip Burman, Chairman of Mobius Foundation, by Mr. Rajdeep Sardesai, Consulting Editor & Anchor at India Today. Their engaging dialogue offered profound insights into the interconnectedness of population stabilisation, climate action, and sustainable development, emphasising the need for education and collaborative efforts to address these global challenges.

The plenary also featured two Special Thematic Sessions. The first session was a panel discussion on Climate Action, Sustainability, and Population Dynamics, brought together experts to discuss the

role of sustainable population management in mitigating climate change and ensuring ecological balance. The second panel discussion on Population, Environment, and Life, explored the complex interplay between population growth, environmental health, and quality of life, offering innovative strategies and policy recommendations for sustainable futures.

This episode provided a comprehensive overview of the pivotal role population stabilisation plays in global sustainability, inspiring actionable solutions and fostering multidisciplinary dialogue.

Problem Statement

The rapid growth of the global population poses significant challenges to achieving climate action, ecological balance, and sustainable development. Increasing population density exacerbates environmental degradation, strains natural resources, and diminishes quality of life, creating an urgent need for sustainable population management strategies. However, the complex interplay between population dynamics, environmental health, and socioeconomic development remains underexplored, hindering the formulation of integrated solutions that address these interconnected issues.

Population stabilisation is often overlooked as a critical lever for mitigating climate change and fostering sustainability, and there is a gap in multidisciplinary approaches that effectively combine policy interventions, public awareness, and actionable strategies. This underscores the need for dialogue and collaboration among stakeholders, including policymakers, educators, and environmental experts, to craft innovative solutions.

The thematic discussions at ICSE 2023's special plenary on *Climate Action, Sustainability, and Population Dynamics* and *Population, Environment, and Life* highlighted these challenges while offering evidence-based recommendations and inspiring actionable pathways. This paper aims to build on those insights by exploring sustainable population management as a transformative tool for addressing the intertwined crises of environmental degradation, resource scarcity, and declining quality of life. It seeks to advance a holistic framework that integrates population stabilisation into the broader agenda of global sustainability.

Interview with Mr. Pradip Burman

The discussion focused on key 21st-century issues: climate action, sustainability, and population dynamics. Mr. Burman emphasised that population dynamics is often overlooked despite its critical role in sustainability. The Mobius Foundation prioritises education and population stabilisation, viewing them as long-term solutions to sustainability challenges.

L-R: Mr. Pradip Burman and Mr. Rajdeep Sardesai

Participants

Mr. Pradip Burman
Chairman, Mobius Foundation

Mr. Rajdeep Sardesai
Consulting Editor & Anchor, India Today

Key insights from Mr. Burman's vision:

- **Population and Sustainability:** Population stabilisation, though a long-term process (spanning 60-100 years), is essential for sustainable development. He noted that population control is indirectly addressed through education, as evidenced by the declining Total Fertility Rate (TFR) globally and in India, except in some districts that remain above 2.0.
- **Education as a Solution:** Mobius Foundation focuses on providing education and contraception in over 100 districts in India to address population concerns. By investing in education and contraception, Mobius Foundation is fostering a generation of informed and responsible citizens who can contribute to sustainable development, ensuring a balanced coexistence between human needs and environmental resources.
- **Wake-Up Calls and Climate Change:** Mr. Burman acknowledged that while discussions on population and climate action have increased, tangible action is often delayed until disasters strike. He attributed current efforts to growing awareness of climate change's impacts.
- **A Call to Action:** He urged younger generations to protect nature and actively participate in conservation efforts, emphasising that the planet's degradation directly threatens their future.

Mr. Burman concluded by highlighting the link between education, reduced fertility rates, and the broader need to prioritise nature conservation. The Mobius Foundation exemplifies a proactive approach to addressing long-term sustainability challenges.

Panel Discussion on Climate Action Sustainability and Population Dynamics

The panel discussion underscored the complex and multidimensional interconnections between population dynamics, gender equality, and climate change. It explored how population growth and distribution directly influence resource consumption, environmental degradation, and the demand for sustainable infrastructure. The conversation emphasised the importance of integrating gender equality into climate solutions, recognising that empowering women through education, healthcare access, and economic opportunities can lead to more sustainable population growth patterns. Furthermore, the

panellists highlighted how addressing gender disparities not only strengthens community resilience to climate impacts but also fosters inclusive decision-making processes that drive equitable and effective climate action.

Moderator

Mr. Rajdeep Sardesai
Consulting Editor &
Anchor, India Today

Panellists

Mr. David R. T. Richardson
CEO,
Population Crisis, UK

Ms. Poonam Muttreja
Executive Director,
Population Foundation of India

Mr. Alistair Currie
Head - Campaigns and Communications,
Population Matters, UK

Ms. Nandita Bajaj
Executive Director,
Population Balance,
United States

MAIN DISCUSSION POINTS

1. Education as a Tool for Empowerment and Stabilisation

- Education was emphasised as a critical factor for empowering women and ensuring population stabilisation. It delays marriage, provides job opportunities, and supports reproductive autonomy.
- Education, particularly in STEM fields, equips women to play a significant role in combating climate change.

2. Intersection of Gender Equality and Climate Action

- Women, especially in developing countries, are disproportionately affected by climate change.
- Empowering women through education, healthcare, and reproductive rights can significantly contribute to climate action and community development.

3. Population and Sustainability Challenges

- There is a lack of policy-level recognition of the impact of population growth on sustainability and climate change.
- Addressing population issues through empowerment and education, rather than coercion or incentives, is critical for sustainable development.

4. Critique of Coercive Population Policies

- Coercive measures, such as two-child norms or sterilisation incentives, were deemed ineffective and counterproductive.

- India's low investment in family planning and healthcare is a barrier to population stabilisation.

5. Population Denialism

- Population denialism refers to the dismissal of population growth's impact on ecological and social crises, such as biodiversity loss, climate change, and resource scarcity.
- Acknowledging the planet's finite resources is vital for addressing these challenges effectively.

6. Successful Population Strategies

- Examples from countries like Rwanda and Thailand show that empowering women, addressing poverty, and providing access to contraception are effective strategies for population stabilisation.
- In high-income countries, reducing carbon footprints and educating individuals on the implications of large families were highlighted as important measures.

7. Patriarchal Control and Reproductive Autonomy

- Addressing patriarchal norms that restrict women's reproductive choices is crucial for population reduction and stabilisation.
- The focus should shift from "control" to enabling informed and liberated choices for women.

8. Global Perspective on Population Dynamics

- Resistance to acknowledging population issues often stems from discomfort or denial, particularly in high-income countries where per capita environmental impact is significant.
- A robust scientific model to determine sustainable population levels is still lacking.

9. Call to Action

- A comprehensive approach to population stabilisation involves education, healthcare, gender equality, and advocacy, rather than coercion.
- Policymakers must recognise population dynamics as a critical component of sustainability and climate action.

Points to Ponder

Mr. David R. T. Richardson, CEO, Population Crisis, UK offered insights into the critical intersection between climate action and gender equality. He highlighted the disproportionate vulnerabilities faced by women, particularly in developing countries, in the wake of climate-related challenges. Women in these regions often bear the brunt of climate change due to socio-economic inequalities, limited access to resources, and traditional roles that place them on the frontlines of managing water, food, and energy resources.

He emphasised that empowering women is not only a matter of justice but also a practical strategy for effective climate change mitigation. He argued for greater investments in women's education, which equips them with the knowledge and

tools to adapt to and combat climate impacts. Additionally, he advocated for expanding women's access to employment opportunities, particularly in sectors that influence climate resilience, such as agriculture, renewable energy, and disaster management.

He further stressed the importance of increasing women's participation in STEM (Science, Technology, Engineering, and Mathematics) fields. He noted that women's involvement in these disciplines can lead to innovative solutions and more inclusive approaches to tackling climate challenges. For instance, diverse perspectives in technology design and policy-making can result in more equitable and sustainable outcomes.

By integrating gender equality into climate strategies, he underscored that societies can unlock the potential of half the population to drive transformative change. He concluded with a call to action for policymakers and stakeholders to prioritise gender-sensitive approaches in climate action plans, ensuring that women are not merely beneficiaries but active agents of change in building a sustainable future.

Ms. Poonam Muttreja, Executive Director, Population Foundation of India underscored the pivotal role of women's empowerment in achieving societal progress, emphasising education, access to family planning, and reproductive rights as foundational elements. She argued that empowering women is not only a matter of human rights but also a strategic necessity for addressing challenges such as population growth, health disparities, and socio-economic inequities.

Education is a cornerstone of empowerment, serving as a transformative tool that delays early marriages and opens up a spectrum of opportunities for women. By keeping girls in school, societies can mitigate the prevalence of child marriage and early pregnancies, which often perpetuate cycles of poverty and limit women's potential. Educated women are more likely to make informed decisions about their health, pursue careers, and participate actively in community and economic development. This, in turn, contributes significantly to population stabilisation by reducing fertility rates and improving overall family well-being.

She also highlighted the critical need for universal access to family planning services and reproductive rights. Ensuring that women have the autonomy to make decisions about if and when to have children not only promotes gender equality but also leads to better maternal and child health outcomes. Access to modern contraceptive methods and comprehensive reproductive healthcare empowers women to plan their futures, enabling them to contribute meaningfully to society and the economy.

She also stressed that education and reproductive rights must go hand-in-hand with broader societal efforts to dismantle systemic barriers, such as gender-based violence, cultural norms that restrict women's mobility, and inadequate representation in decision-making spaces. When these elements are addressed collectively, the ripple effect is profound: women gain agency over their lives, families experience improved health and economic security, and nations make strides toward sustainable development goals.

In conclusion, she called for an integrated approach to empowering women, recognising that their education, health, and rights are inextricably linked to broader objectives of population stabilisation, poverty alleviation, and sustainable development. By investing in women, societies can unlock their potential as changemakers and key drivers of progress.

Mr. Alistair Currie, Head - Campaigns and Communications, Population Matters, UK, discussed the critical need for equitable and sustainable population policies, drawing on the contrasting examples of Thailand and Rwanda. He underscored the importance of addressing population growth through strategies rooted in human rights, sustainability, and equity, rather than coercion or control. His approach highlighted the interconnected roles of women's empowerment, poverty alleviation, education, and access to contraception in achieving these goals.

He emphasised the transformative impact of empowering women, noting that gender equality and women's autonomy are essential to tackling the population challenge. When women have access to education, economic opportunities, and reproductive health services, they are more likely to delay marriage and childbirth, leading to smaller family sizes and improved socio-economic outcomes. He cited the success of Thailand's voluntary family planning programs, which integrated education and healthcare to achieve significant reductions in fertility rates without coercion. In contrast, he highlighted the challenges faced by Rwanda, where rapid population growth continues to strain resources and underscore the urgency of sustainable and rights-based interventions.

A central tenet of his argument was the necessity of prioritising human rights. He firmly advocated for a comprehensive approach that focuses on empowering individuals and communities to make informed decisions about their lives. Coercive policies, he warned, undermine trust and lead to human rights violations, ultimately proving counterproductive in addressing population issues. Instead, policies must align with ethical standards and ensure that people are equipped with the tools and opportunities to make choices that benefit both themselves and the environment.

He also highlighted the pivotal role of high-income countries, such as the United States and the United Kingdom, in addressing global population challenges. He called for these nations to acknowledge their historical and ongoing contributions to global inequities and climate change, urging them to take greater responsibility in supporting sustainable population policies worldwide. Specifically, he advocated for increased investment in family planning and reproductive health initiatives in developing countries, which often face the dual burdens of rapid population growth and limited resources. Such support, he argued, should not only provide access to contraception but also prioritise education and poverty alleviation as integral components of sustainable development.

He further emphasised the need for high-income countries to align their domestic and international policies with sustainability principles. He pointed to the environmental footprint of affluent nations as a significant factor in the global population discourse, arguing that consumption patterns and resource allocation must be addressed

in tandem with population stabilisation efforts. By promoting sustainable practices and supporting global initiatives, these countries can lead by example and foster international collaboration to address the complex interplay of population, poverty, and environmental sustainability.

In conclusion, his called for a paradigm shift in how population challenges are addressed, advocating for solutions that respect human rights, empower individuals, and promote global equity. By integrating these principles into national and international policies, he argued, the world can move closer to a sustainable and equitable future.

Ms. Nandita Bajaj, Executive Director, Population Balance, United States introduced the concept of "population denialism," a term she used to describe the pervasive ideology that minimises or outright dismisses the significant impact of population growth on environmental sustainability, resource consumption, and social equity. She argued that this form of denialism has become a major impediment to meaningful discourse and action on global challenges, as it hinders the development of effective, rights-based solutions to address the interconnected crises of climate change, biodiversity loss, and resource scarcity.

She explained that population denialism often stems from a combination of socio-political sensitivities, economic interests, and cultural taboos surrounding discussions of reproduction and family size. This resistance is further reinforced by fears of stigmatisation or accusations of infringing on individual freedoms. While these concerns are legitimate, she argued, they have resulted in a counterproductive reluctance to confront the very real pressures that population growth places on finite planetary resources and ecological systems. She emphasised that avoiding this topic does not make the challenges disappear; rather, it exacerbates the risks of environmental degradation and socio-economic instability.

A key aspect of her argument was the need to challenge the narratives that frame population growth as an inevitable or unassailable phenomenon. She highlighted that human population has grown exponentially over the last century, with profound consequences for the planet's carrying capacity. This growth has been accompanied by increased resource extraction, habitat destruction, and carbon emissions, contributing significantly to global warming and biodiversity loss. By denying or downplaying these links, she contended, society is failing to address a critical driver of environmental and social challenges.

To counter population denialism, she advocated for open, evidence-based discussions that prioritise transparency, empathy, and inclusivity. She stressed the importance of framing population-related discourse in a manner that respects human rights and avoids blame or coercion. This involves emphasising solutions that empower individuals, particularly women, to make informed decisions about family size through access to education, reproductive health services, and economic opportunities. She also underscored the need to acknowledge the role of overconsumption, particularly in high-income countries, as an equally critical factor in environmental degradation.

Her critique extended to the political and institutional barriers that perpetuate population denialism. She pointed to the influence of vested interests in industries such as agriculture, energy, and real estate, which often benefit from policies that prioritise growth over sustainability. These interests, she argued, contribute to a culture of denial by promoting narratives that equate population growth with economic progress while ignoring its ecological and social costs. Breaking free from these narratives requires courageous leadership and a commitment to long-term thinking, both of which are essential for achieving sustainable development.

She also examined the role of pronatalism in reinforcing population denialism, highlighting how policies and cultural narratives that encourage high birth rates often exacerbate environmental pressures. Pronatalist ideologies, which frame population growth as an economic necessity or a marker of national strength, frequently overlook the ecological consequences of expanding human numbers. She pointed out that such perspectives, while sometimes well-intentioned, ignore the strain that unchecked growth places on finite resources, from water and arable land to energy and biodiversity. Moreover, she argued that pronatalist policies often intersect with socio-political agendas that prioritise short-term economic gains over long-term sustainability. Challenging these narratives requires shifting the focus toward policies that promote balanced demographic trends, ensuring that human rights, reproductive autonomy, and environmental responsibility are at the core of population discussions.

In her conclusion, she called for a paradigm shift in how population issues are perceived and addressed. She advocated for integrating population considerations into broader sustainability frameworks, emphasising the interconnectedness of population dynamics, consumption patterns, and environmental resilience. By fostering honest, inclusive conversations and rejecting denialism, she argued, societies can develop holistic strategies that balance human well-being with the health of the planet.

Panel Discussion on जनसंख्या स्थिरीकरण और पर्यावरण संसाधनों के बीच ताल–मेल की जरुरत

The second panel discussed the critical issue of uncontrolled population growth and its far-reaching impacts on resources, climate, and sustainable development. The alarming rise in population since independence was highlighted, emphasising its strain on limited resources like water, food, and employment. The societal preference for male children and the need for systemic changes in mindset were underlined as contributing factors. Panellists discussed the disproportionate impact on women, stressing the need for enhanced education, health services, and awareness programs to empower them. The importance of collective efforts, alongside government initiatives and advocacy by organisations like the Mobius Foundation and UNESCO, was emphasised for achieving sustainability goals. Despite progress in reducing fertility rates, the need for comprehensive education and innovative policies to address population momentum and its environmental consequences remained a key takeaway.

Moderator

Mr. Sayeed Ansari
Anchor Aaj Tak

Panellists

Dr. Ram Boojh
Advisor, Mobius Foundation

Dr. Govind Singh
Indian Institute of Mass Communication, New Delhi

Ms. Huma Masood
Senior Gender Specialist, UNESCO

Mr. Kartikeya Sarabhai
Director, Centre for Environment Education, Ahmedabad

MAIN DISCUSSION POINTS

1. Impact of Uncontrolled Population Growth:

- Rapid population growth has placed immense pressure on limited resources such as food, water, air, and employment opportunities.
- India's population has grown from 303 million in 1947 to over 1.42 billion, surpassing China as the most populous country.
- The imbalance between resource availability and population demand creates severe challenges for sustainable development.

2. Social and Cultural Drivers of Population Growth:

- Persistent cultural preferences, such as the desire for a male child, contribute to higher birth rates.
- Gender biases and traditional beliefs around inheritance and family support perpetuate these trends.

3. Gendered Impact of Population Growth:

- Women face disproportionate burdens due to population growth, including health risks, inadequate access to education, and limited autonomy over reproductive decisions.
- Early marriages and lack of awareness exacerbate the challenges faced by women and their children.

4. Policy Interventions and Challenges:

- Efforts to reduce fertility rates through advocacy, education, and healthcare services have shown mixed results.
- Programs such as training ASHA workers and creating awareness about contraception are underway but require stronger implementation and community involvement.
- The need for participatory approaches involving society at

large, not just government initiatives, was emphasised.

5. Role of Education and Advocacy:

- Education is recognised as a critical factor in addressing population growth, empowering individuals to make informed decisions and promoting sustainable development.
- Advocacy programs targeting behavioral change and awareness, especially in high Total Fertility Rate (TFR) districts, are essential.

6. Global Perspectives and Sustainability Goals:

- Alignment with Sustainable Development Goals (SDGs) is necessary to manage population dynamics and their impact on climate, biodiversity, and resource sustainability.
- International organisations like UNESCO and Mobius Foundation are facilitating knowledge sharing, training, and policy advocacy to address these issues.

7. Population Stabilisation and Environmental Impacts:

- While some regions are experiencing population stabilisation, momentum effects continue to drive overall growth, with India's population projected to reach 1.5 billion by 2030 and 1.6 billion by 2050.
- Overpopulation leads to resource depletion, biodiversity loss, and contributes significantly to climate change.

8. Positive and Balanced Approaches:

- Programs like the VIRAM Agenda Sustainability focus on education, empowerment, and grassroots action to tackle population growth as an opportunity rather than merely a challenge.
- A holistic approach, integrating education, advocacy, and sustainable practices, is necessary for meaningful progress.

Points to Ponder

Dr. Govind Singh, Indian Institute of Mass Communication, New Delhi drew attention to the dramatic increase in India's population approximately 340 million at the time of independence to an estimated 1.428 billion in recent years. This unprecedented growth, he argued, has brought immense pressure on the country's finite natural resources, particularly water and air, both of which are fundamental to human survival and well-being.

He elaborated on the intricate link between population growth and resource depletion, highlighting how each additional birth intensifies the demand for critical resources. He emphasised that water, a resource already under severe strain due to overextraction, pollution, and climate change, faces heightened stress in meeting the needs of a rapidly growing population. Similarly, air quality, particularly in urban areas, has deteriorated due to increased vehicular emissions, industrial activities,

and deforestation—issues exacerbated by the demands of population expansion. These pressures, he warned, threaten not only environmental sustainability but also the overall health and quality of life for India's citizens.

He also highlighted the critical role of education in addressing population-related challenges. He stressed that education serves as a transformative tool, not only in raising awareness about the implications of unchecked population growth but also in empowering individuals, particularly women, to make informed choices about family planning. By fostering an understanding of the connections between population, resources, and sustainability, education can help cultivate a more environmentally conscious and socially responsible populace.

In particular, he pointed to the significance of integrating population education into school curricula. This approach, he argued, could help future generations develop a nuanced understanding of the challenges posed by population growth and the importance of sustainable living. Furthermore, he emphasised the role of vocational and higher education in equipping young people with the skills needed to contribute to sustainable development efforts, from water management to renewable energy innovation.

He also stressed the importance of addressing the socio-economic factors that contribute to high fertility rates in certain regions. He noted that poverty, limited access to healthcare, and gender inequality often perpetuate a cycle of high population growth, which, in turn, exacerbates resource pressures. By investing in programs that enhance access to reproductive health services, promote gender equality, and create economic opportunities, policymakers can address these root causes while fostering a more equitable and sustainable society.

Dr. Ram Boojh, Advisor, Mobius Foundation provided valuable insights into the transformative impact of media campaigns such as the "VIRAM: Agenda Sustainability" initiative spearheaded by the Mobius Foundation. He elaborated on the campaign's strategic approach, highlighting how it leverages various media platforms to effectively raise awareness about sustainability issues, particularly among marginalised and underserved communities. By utilising accessible and culturally relevant messaging, the campaign seeks to bridge knowledge gaps and empower individuals to make informed decisions that contribute to a more sustainable future.

Dr. Boojh emphasised the vital role of awareness and education in fostering a deeper understanding of individual rights and responsibilities, particularly in the context of sustainability. He argued that educational initiatives, whether formal or informal, are critical in transforming societal attitudes and behaviours. For marginalised populations, who often face barriers to accessing formal education and resources, media campaigns like "VIRAM" provide an essential avenue for disseminating knowledge and encouraging proactive participation in sustainable practices.

Through the lens of the "VIRAM" campaign, he illustrated how targeted communication strategies can resonate

with diverse audiences. He discussed the importance of using relatable narratives and localied content to address region-specific challenges, ensuring that the message of sustainability is both relevant and actionable. By incorporating visual storytelling, testimonials, and interactive platforms, such campaigns engage communities in meaningful dialogues about their role in safeguarding the environment and improving their quality of life.

He also highlighted the critical role that population growth plays in perpetuating the vicious cycle of production and consumption. He explained that as populations grow, so does the demand for goods, services, and resources, leading to increased extraction and exploitation of the Earth's limited natural capital. This relentless cycle, he noted, not only accelerates resource depletion but also contributes to environmental degradation, including habitat destruction, loss of biodiversity, and climate change.

He emphasised that unchecked population growth exacerbates challenges such as poverty, resource scarcity, and inequality, which in turn undermine efforts to achieve sustainable development.

He argued that the impacts of population growth extend beyond resource consumption, influencing social, economic, and environmental systems in complex ways. For instance, rapid urbanisation driven by population pressures often leads to overcrowded cities, strained infrastructure, and increased pollution—all of which have cascading effects on public health and ecosystem integrity. Media campaigns, therefore, must not only inform but also inspire collective action to address these multifaceted challenges.

He further highlighted the role of media as a catalyst for policy advocacy and behavioural change. He noted that by amplifying voices from marginalised communities and bringing critical issues to the forefront of public discourse, campaigns like "VIRAM" can influence policymakers and stakeholders to prioritise sustainability in decision-making processes. Moreover, by fostering a sense of shared responsibility, these campaigns encourage individuals, businesses, and governments to collaborate in creating sustainable solutions that benefit both people and the planet.

Ms. Huma Masood, Senior Gender Specialist, UNESCO addressed the significance of sensitisation as a prerequisite for genuine empowerment. She explained that societal attitudes and entrenched gender norms often serve as barriers to women's rights and opportunities. Sensitisation campaigns, therefore, are critical for challenging stereotypes, breaking down patriarchal structures, and fostering an environment where women's voices are valued and respected. She highlighted the role of community-level initiatives in promoting gender sensitivity and advocated for collaborations among governments, NGOs, and educational institutions to mainstream gender equality at all levels.

She emphasised education, stating is not just a fundamental right but also a transformative tool for empowerment. She argued that access to quality education equips women with the knowledge and skills necessary to

make informed choices, assert their rights, and contribute meaningfully to their communities. Education also serves as a key enabler for economic independence, as it opens avenues for employment and entrepreneurship, thus reducing reliance on traditional, often inequitable support systems.

She elaborated on the broader societal benefits of women's education, noting that educated women are more likely to advocate for their children's education, participate in civic and political activities, and contribute to addressing critical challenges such as poverty, inequality, and climate change.

She further asserted that knowledge-building is essential to empower women with the tools to navigate complex social, economic, and political landscapes. Beyond formal education, knowledge-building encompasses access to information about legal rights, health care, family planning, financial literacy, and environmental sustainability. She emphasised that when women are equipped with comprehensive and actionable knowledge, they are better positioned to make decisions that benefit themselves, their families, and their communities.

Additionally, she pointed out that women's empowerment is inextricably linked to broader global challenges, including climate change, population growth, and sustainable development. She argued that empowering women is not only a matter of justice but also a strategic imperative for addressing these issues. For instance, studies consistently show that when women are involved in decision-making processes related to natural resource management and climate action, outcomes are more effective and equitable.

Mr. Kartikeya Sarabhai, Director, Centre for Environment Education, Ahmedabad emphasised that the root cause of population surge can be traced to entrenched cultural and societal norms, particularly those related to traditional gender roles. He explained that in large parts of India, there exists a strong preference for male children, stemming from the belief that having a son is essential for continuing the family lineage and performing last rites for deceased parents, a practice deeply rooted in cultural and religious traditions.

This preference for male offspring perpetuates higher birth rates as families continue to have children in the hope of bearing sons. He stressed that this cultural mindset not only exacerbates the population problem but also reinforces gender inequalities, limiting the value and opportunities accorded to girls.

He called for a transformative shift in societal attitudes and emphasised the importance of challenging and re-evaluating these traditional perceptions of gender roles. He advocated for educational campaigns, community engagement, and policy interventions that promote gender equality and highlight the importance of daughters as equal contributors to familial and societal progress. By addressing these cultural biases, he argued, India could not only curb population growth but also foster a more equitable society where the aspirations and rights of women are respected and celebrated.

Outcome and Impact

Enhanced Public Awareness and Multidisciplinary Insights: The session, broadcast as the seventh episode of the VIRAM: Agenda Sustainability series, reached a wide audience, effectively raising public awareness about the critical links between population stabilisation, climate action, and sustainable development. The engaging multidisciplinary dialogue and collaboration, brought together stakeholders from various sectors. The episode highlighted the role of population management in addressing climate challenges and preserving ecological balance and provided innovative strategies and policy recommendations, emphasising the interplay between population growth, environmental health, and quality of life.

Policy Development and Long-term Impact: By presenting evidence-based strategies and actionable solutions, the episode contributed to shaping policy frameworks and inspiring future initiatives aimed at achieving a balance between population growth and environmental preservation. It also inspired actionable solutions and laid the groundwork for further research and advocacy on population stabilization. It ensured the conversation continues to drive awareness, education, and policy alignment at both national and global levels.

Call to Action

The episode addressed the complex and deeply intertwined challenges of population growth, climate change, and sustainability, each of which significantly influences and exacerbates the other. Rapid population growth intensifies the demand for natural resources, leading to environmental degradation, deforestation, and the overexploitation of water, soil, and energy reserves.

By exploring the synergies between population stabilisation and environmental stewardship, the episode brought focus to the role of education, innovative policies, and collaborative strategies in addressing these global challenges. It emphasised that population stabilisation is not merely a demographic concern but a transformative tool to balance ecological systems, ensure equitable resource distribution, and secure a sustainable future for generations to come.

This discussion served as a catalyst for action, inspiring a multidisciplinary approach to tackle these pressing issues and highlighting the necessity of integrating population stabilisation into broader sustainability agendas.

Individuals

- **Adopt Sustainable Practices:** Embrace eco-friendly lifestyles by conserving resources, reducing waste, and making sustainable consumption choices to minimise environmental impact.
- **Advocate for Awareness:** Actively participate in community initiatives, public dialogues, and campaigns like VIRAM: Agenda Sustainability to promote population stabilisation and sustainable development awareness.
- **Empower Through Education:** Equip yourself and others with knowledge about family planning, reproductive health, and the environmental implications of population growth, fostering informed and responsible decision-making.

Government

- **Integrate Population Stabilisation into Policy:** Develop and implement policies that prioritise education, reproductive health, and access to family planning services as essential components of sustainability strategies.
- **Strengthen Global and Local Collaboration:** Foster partnerships between nations, organisations, and local communities to address population dynamics and their impact on climate resilience and resource management.
- **Promote Education and Gender Equality:** Invest in universal education, particularly for women and girls, and empower marginalised communities to ensure equitable access to opportunities that drive sustainable progress.

Conclusion

Population stabilisation is a cornerstone of sustainable development, with far-reaching implications for climate action, resource management, and ecological balance. This academic exploration underscores the intricate interplay between population dynamics and global sustainability challenges, emphasising the urgency of addressing these issues through education, policy innovation, and collaborative action.

The initiatives highlighted at ICSE 2023, particularly under the VIRAM: Agenda Sustainability campaign, demonstrate the transformative potential of targeted interventions. By integrating education, family planning, and environmental stewardship, these efforts provide a blueprint for addressing the multifaceted challenges posed by population growth.

Governments, civil society, and individuals must work together to prioritise population stabilisation within broader sustainability agendas. Investments in education, gender equality, and public awareness campaigns are critical to fostering informed decision-making and empowering communities to adopt sustainable practices.

Population stabilisation is not merely a demographic goal but a strategic imperative for ensuring a resilient and equitable future. By acting decisively and collaboratively, stakeholders across sectors can transform these challenges into opportunities, paving the way for a sustainable, balanced coexistence between humanity and the environment.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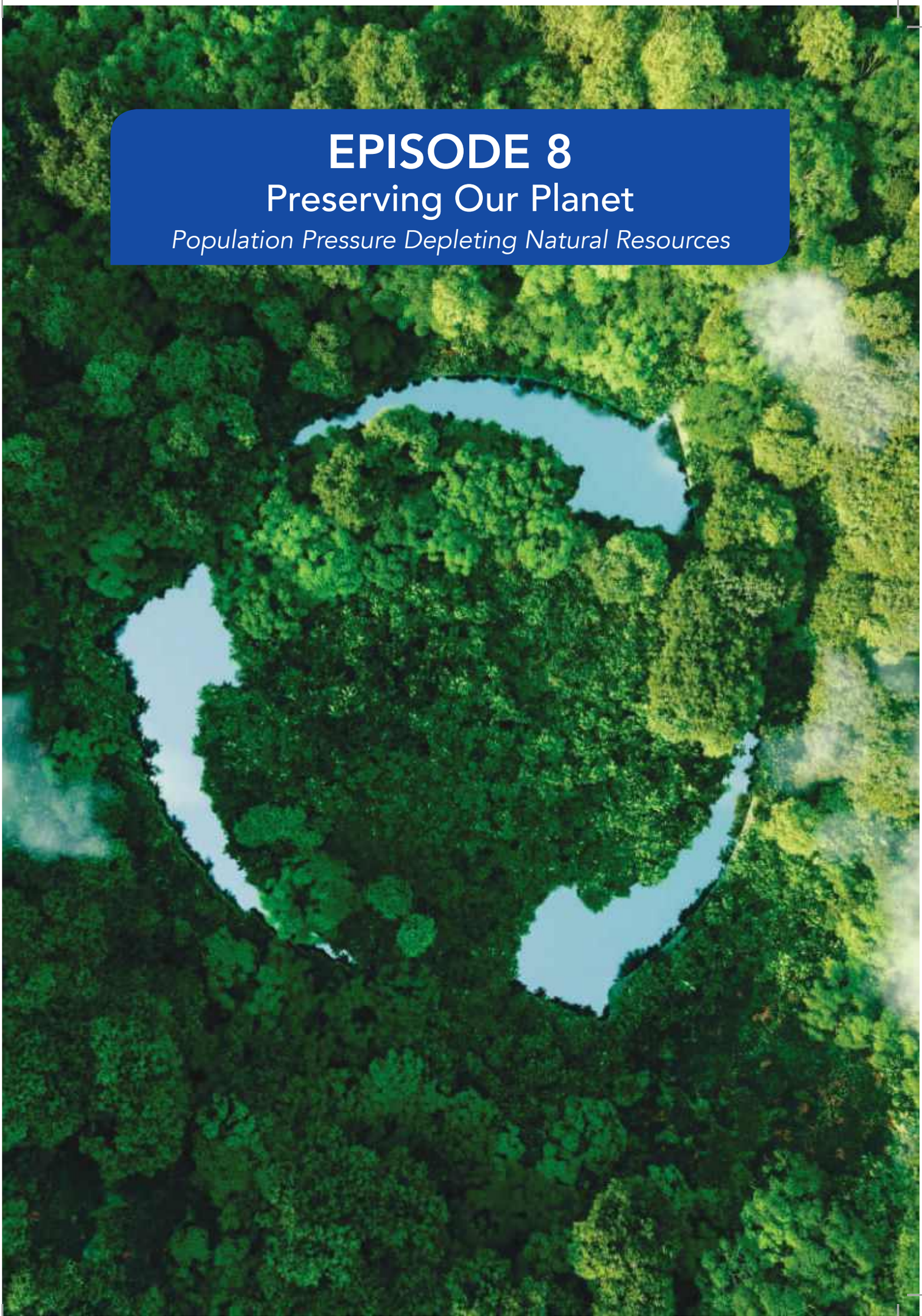

EPISODE 8

Preserving Our Planet

Population Pressure Depleting Natural Resources

Episode 8 : Preserving Our Planet

Population Pressure Depleting Natural Resources

Episode Synopsis

The rapid growth of the global population has profound implications for the planet's natural resources, directly impacting the United Nations Sustainable Development Goals (SDGs) 6 (Clean Water and Sanitation), 7 (Affordable and Clean Energy), 14 (Life Below Water), and 15 (Life on Land). As the world surpasses 8 billion people, the demand for water, energy, land, and biodiversity intensifies, pushing ecosystems to their limits. This episode explores the multifaceted impacts of population growth on natural resources, highlighting key statistics and trends.

Population growth is a significant driver of environmental change. According to the United Nations, the global population is projected to reach nearly 10 billion by 2050[1]. This growth is most pronounced in developing countries, where access to resources is already limited. The increasing demand for food, water, and energy exacerbates the depletion of natural resources, leading to environmental degradation and socio-economic challenges. Approximately 1.2 billion people live in areas of physical water scarcity (SDG6), and this number is expected to increase as the population grows[2]. Over 25% of the world's arable land has been degraded due to overuse and unsustainable agricultural practices[3]. Global energy demand (SDG7) is projected to increase by 50% by 2050, driven largely by population growth and economic development[4]. Increased population leads to higher water consumption for domestic, agricultural, and industrial purposes. This results in over-extraction of groundwater, reduced river flows, and heightened competition for water resources. Expanding populations require more land for housing, agriculture, and infrastructure. This often leads to deforestation, loss of biodiversity, and soil erosion. The demand for energy rises with population growth, leading to increased exploitation of fossil fuels and higher greenhouse gas emissions. Habitat destruction and pollution from human activities threaten biodiversity, with many species facing extinction (SDG 15). In marine environments, human activities such as overfishing and pollution threaten aquatic ecosystems, pushing many marine species toward extinction (SDG14). Consequently, the burgeoning global and Indian populations pose significant challenges to the sustainable management of natural resources, necessitating comprehensive strategies to balance human needs with ecological preservation.

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1. World population projected to reach 9.8 billion in 2050, and 11.2 billion in 2100 | United Nations

2. Global Population Dynamics: Environmental and Resource Impacts - BiologyInsights

3. Population and Environment Case Studies: Local Approaches to a Global Challenge | Blog | Integration and Application Network

4. The Impact of Population Growth on Natural Resources and Farmers' Capacity to Adapt to Climate Change in Low-Income Countries | Earth Systems and Environment

Problem Statement

The burgeoning global population poses a critical challenge to the sustainable management of natural resources. As the demand for water, land, and energy intensifies, the capacity of these resources to support human life and ecological balance is severely compromised. Globally, overpopulation leads to water scarcity, pollution, deforestation, urban sprawl, and increased reliance on fossil fuels, exacerbating climate change and biodiversity loss. In India, groundwater depletion, river pollution, unsustainable agricultural practices, and rapid urbanization further strain natural resources. Addressing these challenges requires a comprehensive understanding of the interplay between population dynamics and resource management, along with effective policies, technological innovations, and community engagement to ensure a balanced and healthy environment for future generations.

MAIN DISCUSSION POINTS

Discussion Points on Population Growth and Utilization of Natural Resources in India

1. Population Growth and Resource Strain:

India's population, projected to reach 1.5 billion by 2030, continues to grow at an average rate of 1% annually, which significantly increases the demand for natural resources. The population surge leads to greater consumption of land, water, energy, and raw materials, putting immense pressure on the country's already strained resources.

Statistic: India's population as of 2023 is approximately 1.43 billion. (World Bank)

2. Water Scarcity and Overuse:

Rapid population growth in India is driving an increase in water consumption, leading to significant water scarcity. Over 600 million people in India are currently facing high to extreme water stress, with major cities like Delhi and Chennai experiencing severe water shortages. Agricultural and industrial demands exacerbate the situation, with the over-extraction of groundwater becoming unsustainable.

Statistic: India uses 25% of the world's groundwater, despite having only 4% of global freshwater resources. (UN Water)

3. Land Degradation and Deforestation:

Increasing population leads to a higher demand for agricultural land,

Reference : *https://earth.org/overpopulation-sustainability/#:~:text=With%20more%20people%20comes%20more,as%20well%20as%20human%20health.*

Reference: *https://www.wateraid.org/in/blog/water-scarcity*

urban expansion, and infrastructure development, resulting in deforestation and land degradation. In India, about 29% of the total land area is affected by degradation due to deforestation, mining, and agriculture. The loss of forests not only depletes biodiversity but also contributes to soil erosion, affecting agricultural productivity.

Statistic: India loses around 1.1 million hectares of forest cover every year. (Forest Survey of India)

4. Energy Demand and Environmental Impact:

The growing population, along with urbanization, has led to an increased demand for energy. India is now the third-largest energy consumer in the world. However, the majority of the energy consumption still comes from fossil fuels, contributing to air pollution, greenhouse gas emissions, and climate change. Transitioning to renewable energy sources is essential to mitigate the environmental impact of this increasing demand.

Statistic: In 2021, India's total primary energy consumption was 925 Mtoe (million tonnes of oil equivalent), with nearly 75% derived from coal, oil, and gas. (IEA)

5. Agricultural Overuse and Resource Depletion:

India's agricultural sector, which employs over 50% of the population, consumes significant amounts of water and land. Over-farming, coupled with population-driven demand for food, has led to the depletion of soil nutrients and overuse of water resources, particularly in states like Punjab and Haryana, which rely heavily on irrigation. This has resulted in water tables depleting at unsustainable rates.

Statistic: In Punjab, groundwater levels have dropped by over 40% in the last 20 years due to excessive water usage in agriculture.

6. Sustainable Resource Utilization and Policy Interventions:

To address the growing challenges posed by population growth, India needs to implement sustainable resource management practices, including water conservation, efficient energy use, and waste reduction. Policies like the National Water Policy, National Forest Policy, and Renewable Energy Mission have been set in place to mitigate the negative effects of population growth on the environment. However, more robust and targeted interventions are required to ensure resource sustainability.

Reference: *https://fsi.nic.in/forest-report-2023*

Reference: *https://www.iea.org/countries/india*

Reference: *https://www.indiaspend.com/agriculture/punjab-farmers-struggle-amidst-plummeting-groundwater-levels-881460#:~:text=In%20the%20course%20of%20two,University%20from%201998%20to%202018.*

Statistic: The renewable energy capacity in India stands at 160 GW, aiming to achieve 500 GW by 2030. (Ministry of New and Renewable Energy)

- **Dr. Ram Boojh, Advisor, Mobius Foundation** stated that sustainable development hinges on a fundamental principle: the judicious use of natural resources in a manner that allows ecosystems to regenerate and maintain their vitality. Sustainable development emphasises a balanced approach where human consumption aligns with the Earth's natural regenerative capacity.

- Sustainable development demands a transformative shift in how societies approach resource utilisation. It calls for adopting strategies such as promoting renewable energy, enhancing resource efficiency, and reducing waste through circular economy models.
- Education and awareness campaigns play a vital role in fostering a culture of conservation and responsible consumption.
- Policies aimed at stabilising population growth, such as access to education and family planning services, are essential to mitigate the strain on natural resources.
- **Dr. Kumar Vishwas, Hindi Poet, Speaker and Socio-political Activist** highlighted that the Nature functions as an intricate system of interconnected elements, each playing a role in maintaining balance and harmony. When humanity disrupts this equilibrium, even slightly, the consequences manifest in the form of natural disasters such as earthquakes, floods, and other calamities.

- The increasing greed and diminishing spirit of harmony with nature signify a deeper problem. Living in harmony with nature is not simply a matter of policy or education; it requires a fundamental shift in human consciousness. The spirituality within each individual must be awakened—a recognition of the interconnectedness of all life and the importance of living within the means of nature's regenerative capacity. This spiritual awakening would help humanity understand its place within the broader ecological system and determine the population and resource use necessary to sustain harmony.
- The exploitation of nature is not limited to the visible—such as wildlife or forests—but extends to the invisible processes that take millions of years.
- Humanity's treatment of animals reflects the broader disregard for nature. The sight of majestic

Reference: https://pib.gov.in/PressReleaseIframePage. aspx?PRID=2073038 #:~:text=Introduction, non%2Dfossil%20sources%20by%202030.

creatures like cheetahs and lions kept in chains or confined to private farmhouses raises profound ethical questions. Such practices underscore the urgent need for humanity to abandon its animalistic tendencies of domination and exploitation and instead embrace a mindset of respect, harmony, and stewardship.

- The ultimate responsibility for the degradation of nature lies with humanity. It is not merely an issue of exploitation for food or resources but a larger failure to preserve the environment and respect the intricate processes that sustain life on Earth. The word Viram - meaning pause or stop - should not be interpreted as a prohibition but as a conscious full-stop on excess desire, greed, and blind competition. It signifies a call to reflection, a break from the unsustainable trajectory, and a starting point for a new age of thought, understanding, and harmonious living.
- India, with its rich cultural heritage of ecological wisdom and sustainable practices, has a significant role to play in this transformative journey. Efforts like Viram exemplify the global leadership and vision needed to foster a sustainable future. By redefining the relationship with nature and adopting a cooperative approach, humanity can unlock the immense potential of ecosystems, achieving a balance that benefits all life on Earth. This is not merely an ecological imperative but a spiritual and moral one, for it is in aligning with nature that humanity can realise its true potential and ensure a sustainable legacy for future generations.

"When I see a helpless animal in chains, I wonder who is the real animal; the one who's been chained or the one holding the chains."

Dr. Kumar Vishwas
Hindi Poet, Speaker and
Socio-political Activist

Case Studies

India

Depleting water resources in Maharashtra: Maharashtra faces a severe water crisis due to growing demand by population increment. The regions like Marathwada and Vidarbha, fall short of water on meeting water demands due to erratic monsoon patterns, over-extraction of groundwater, and inefficient water management practices. The state's reliance on water-intensive crops like sugarcane exacerbates the issue, consuming a significant portion of available water resources. In 2024, dam levels in Maharashtra dropped to

41% of capacity, compared to 56% the previous year[5]. This has led to increased dependence on water tankers and highlighted the need for sustainable water management and crop diversification. Initiatives like the Jal Sanjeevani Project have been implemented to rejuvenate water bodies and improve groundwater levels. This project has desilted and rejuvenated 26 water bodies, increasing water storage capacity and benefiting over 2,000 farmers. Additionally, the Paani Foundation's watershed management programs have empowered villages to manage their water resources more effectively[6].

Energy Consumption in Tamil Nadu: Tamil Nadu is one of India's leading states in energy consumption, with a significant portion of its electricity generated from renewable sources like wind and solar power. In 2023, the state's electricity consumption reached 103,679 GWh, reflecting its growing industrial and residential energy demands[7]. Tamil Nadu's focus on renewable energy has positioned it as a leader in sustainable energy practices, but continuous efforts are needed to balance energy demand with environmental sustainability. Tamil Nadu has set ambitious targets to increase renewable energy penetration to 50% by 2030. The state is investing in grid infrastructure upgrades and energy storage solutions to better integrate renewable energy sources. Additionally, initiatives like the Tamil Nadu Green Climate Company are working towards achieving net-zero emissions by promoting sustainable energy practices and reducing greenhouse gas emissions.

Worldwide

Water management in Israel: Israel is renowned for its innovative and efficient water management practices, which have enabled the country to thrive despite its arid climate and limited natural water resources. Key components of Israel's strategy include desalination, wastewater treatment and reuse, advanced irrigation techniques, and public awareness campaigns. Desalination plants like Sorek and Ashkelon provide about 70% of domestic water needs, while Israel treats and reuses approximately 90% of its wastewater, primarily for agricultural irrigation. The country is a pioneer in drip irrigation technology, which delivers water directly to plant roots, minimizing evaporation and runoff. Public awareness campaigns promote water conservation, fostering a culture of efficient water use. Positive interventions include continuous investment in cutting-edge water technologies, international collaboration through the "Water Diplomacy" program, and robust policies and regulations overseen by the Water Authority.

These efforts have positioned Israel as a global leader in water management, demonstrating how innovative solutions and proactive policies can overcome water scarcity challenges and conserve natural resource.

5. CSR News: Rejuvenating 26 water bodies in Maharashtra through Jal Sanjeevani Project - The CSR Journal
6. Envisioning-Tamil-Nadus-Renewable-Energy-Scenarios-for-2030.pdf
7. tamil-nadus-greenhouse-gas-inventory-and-pathways-for-net-zero-transition.pdf

Outcome and Impact

The discussion highlight ed the critical need for sustainable resource management to counteract the negative impacts of population growth. As populations expand, the demand for natural resources such as water, energy, and arable land increases, often leading to over-extraction and environmental degradation. Implementing effective policies and practices is crucial to enhance resource efficiency, ensuring that resources are used judiciously and sustainably. For instance, adopting sustainable practices and technologies in agriculture, such as precision farming and drip irrigation, can significantly reduce water usage and improve crop yields. Similarly, transitioning to renewable energy sources and improving energy efficiency can reduce reliance on fossil fuels, thereby lowering greenhouse gas emissions and mitigating climate change. Moreover, sustainable resource management practices contribute to socio-economic well-being by creating green jobs, improving public health through reduced pollution, and ensuring long-term food and water security. The analysis highlights the importance of integrated approaches that consider the interconnectedness of ecological, economic, and social dimensions. By addressing these aspects holistically, policies can be more effective in promoting sustainability and resilience, ultimately leading to a more balanced and equitable development. This comprehensive approach is essential for achieving sustainable development goals and ensuring a healthy planet for future generations.

Call to Action

Individuals

- **Adopt Sustainable Practices:** Reduce water and energy consumption, plant tress support sustainable products, and engage in conservation efforts.
- **Raise Awareness:** Educate communities about the impacts of population growth on natural resources and promote sustainable living.
- **Reduce Waste:** Practice recycling, composting, and minimizing single-use plastics to reduce environmental impact.
- **Support Local Initiatives:** Participate in or support local environmental projects and community Natural resource management initiatives
- **Advocate for Change:** Engage in advocacy by supporting policies and leaders who prioritize sustainability and environmental protection.

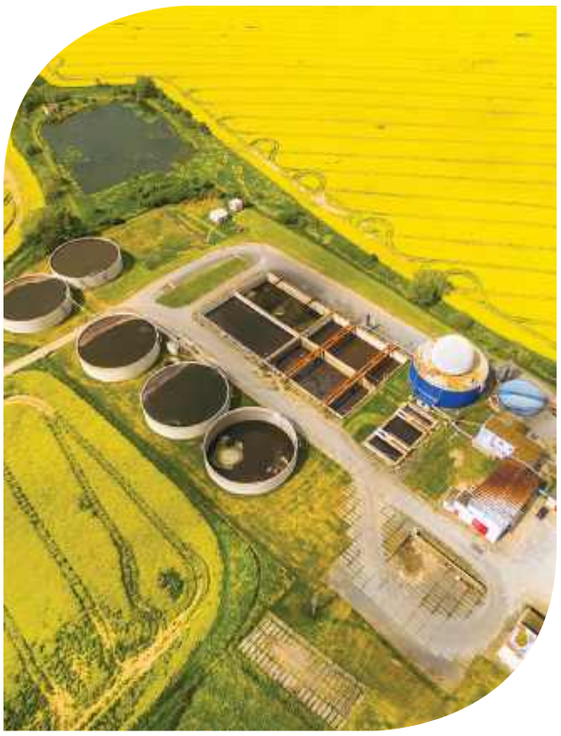
Government

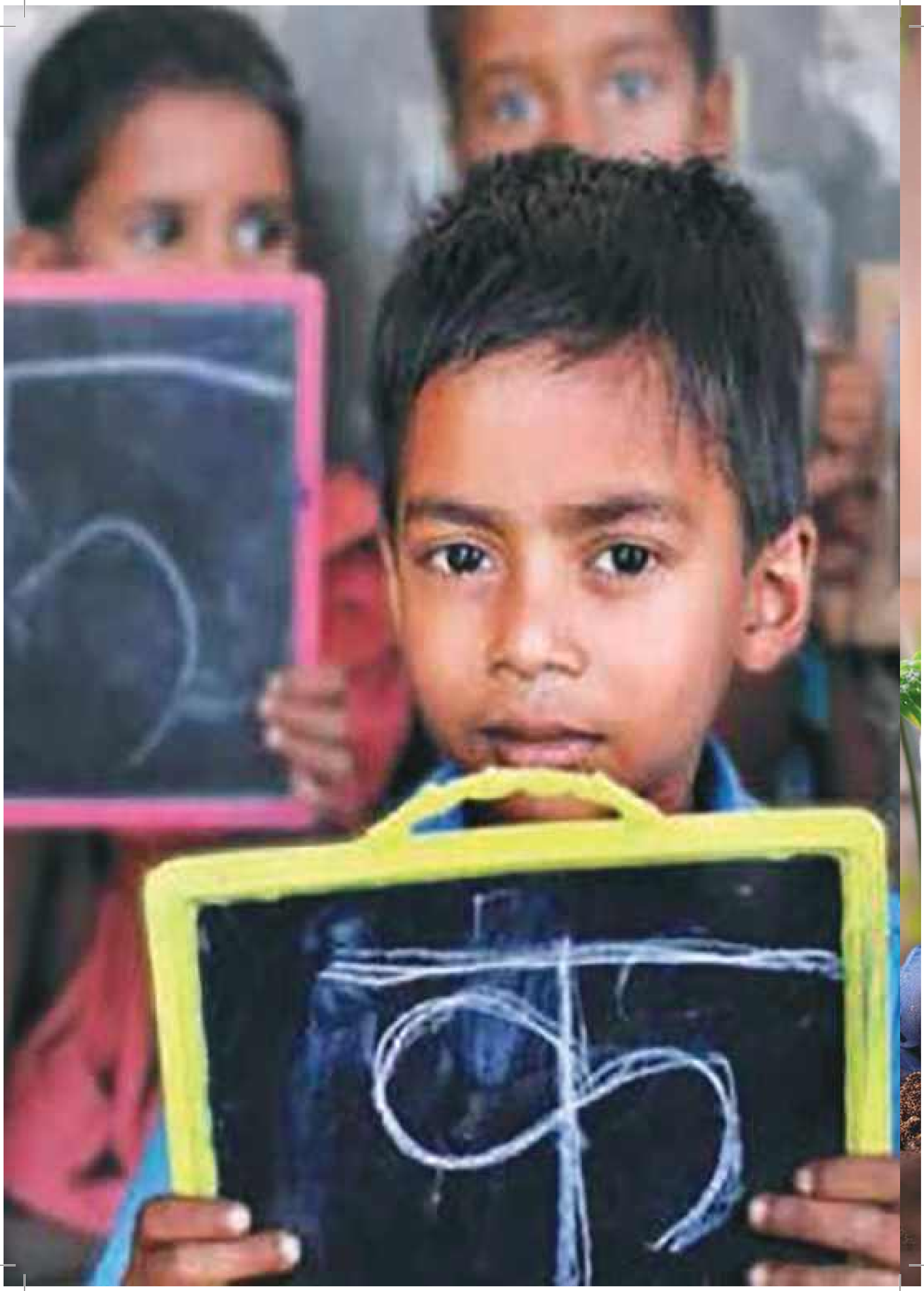
- **Implement Policies:** Enforce regulations on resource use, promote renewable energy, and support sustainable agriculture.
- **Invest in Technology:** Fund research and development of technologies that enhance resource efficiency and conservation.

- **International Collaboration:** Work with other nations to address global challenges related to population growth and resource management.
- **Promote Education:** Integrate environmental education into school curricula to foster a culture of sustainability from a young age.
- **Incentivize Green Practices:** Provide tax breaks, subsidies, or grants for businesses and individuals who adopt sustainable practices.
- **Strengthen Infrastructure:** Develop and maintain infrastructure that supports sustainable resource management, such as efficient public transportation and water recycling systems.

Conclusion

The ever-increasing population presents significant challenges for the sustainable management of natural resources. As the demand for natural resources continues to rise, it becomes increasingly difficult to balance resource use with environmental preservation. Addressing these challenges requires a multifaceted approach that includes policy interventions, technological innovations, and community engagement. Governments must implement and enforce regulations that promote sustainable resource use, invest in research and development of efficient technologies, and collaborate internationally to tackle global issues. Technological advancements, such as renewable energy solutions, precision agriculture, and water recycling systems, play a crucial role in enhancing resource efficiency and reducing environmental impact. Community engagement is equally important, as individuals and local organizations can drive change through sustainable practices, raising awareness, and advocating for responsible resource use. By adopting sustainable practices and promoting responsible resource use, we can ensure a balanced and healthy environment for future generations. This integrated approach, considering ecological, economic, and social dimensions, is essential for achieving long-term sustainability and resilience in the face of population growth and resource constraints. Together, we can create a sustainable future that supports both human well-being and the health of our planet.

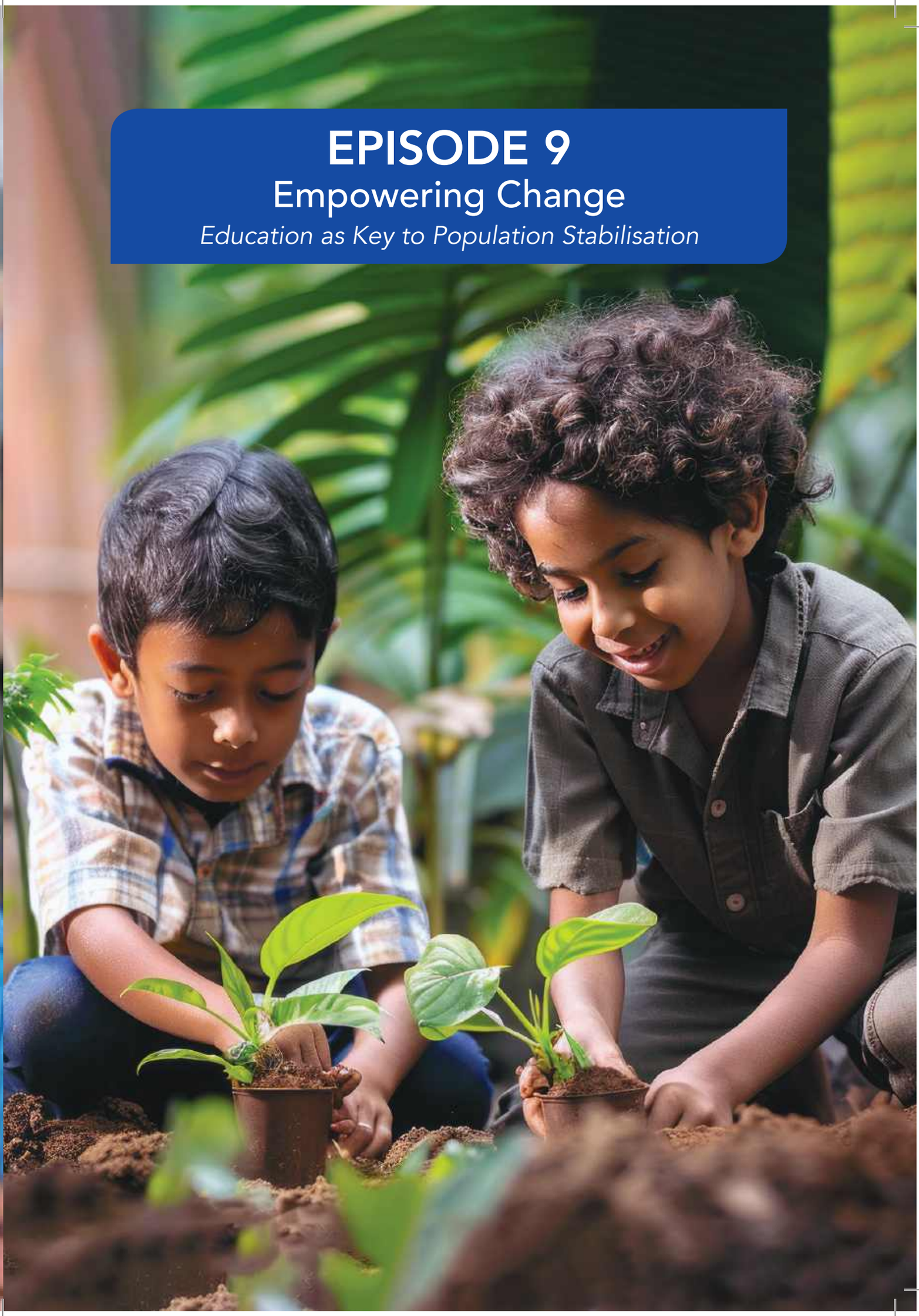




EPISODE 9

Empowering Change

Education as Key to Population Stabilisation



Episode 9 : Empowering Change

Education as Key to Population Stabilisation

Episode Synopsis

The episode highlighted the role of education in population stabilisation and sustainability, Education has been recognised as one of the key factors contributing to overpopulation including, early marriage of girls, misconceptions about family size and livelihood. In many regions, cultural norms and limited access to contraception result in high birth rates[1]. Early marriage of girls often leads to early childbearing, perpetuating cycles of poverty and limiting educational opportunities. The episode also explores potential solutions, such as launching targeted educational and awareness campaigns, promoting family planning, increasing the legal marriage age, encouraging women's participation in the workforce, and raising awareness about contraception. Family planning initiatives can significantly reduce birth rates and improve maternal health[2]. Increasing the legal marriage age helps delay childbearing and allows girls to pursue education and career opportunities. Encouraging women's participation in the workforce not only empowers women but also contributes to economic growth. Raising awareness about contraception is crucial for enabling informed reproductive choices and reducing unintended pregnancies.

Initiatives like the Mobius Foundation's "Aakar" project and the "Viram" campaign in collaboration with India Today Group are highlighted as efforts to address population control through education and sustainable practices. The "Aakar" project focuses on family planning and reproductive health in high-fertility districts of Uttar Pradesh, aiming to stabilize the population through awareness and counselling. The "Viram" campaign, launched in partnership with the India Today Group, promotes sustainability and addresses the challenges of overpopulation through public engagement and policy advocacy.

1. What is Overpopulation? Causes, Effects, and Solutions

2. 6 Possible Overpopulation Solutions: A Deep Dive — Sustainable Review

Problem Statement

Education is the most effective contraceptive, serving as a fundamental tool in addressing overpopulation by empowering individuals, particularly women, with knowledge, choices, and opportunities. When girls receive quality education, they are more likely to delay marriage, have fewer children, and make informed decisions about their reproductive health. Studies have consistently shown that higher levels of education correlate with lower fertility rates, as educated women tend to prioritize career aspirations, financial independence, and family planning. Beyond its impact on population control, education also fosters gender equality, improves economic prospects, and enhances societal awareness of critical issues such as resource conservation and environmental sustainability. By investing in education, particularly for girls, societies can break the cycle of poverty, reduce dependency on natural resources, and promote a more balanced and sustainable demographic future.

Around the world, deep-rooted cultural beliefs, such as the preference for larger families and the perception that more children equate to greater economic security, hinder efforts to control population growth. In many Indian cultures, children are seen as a source of economic and social security, leading to larger family sizes. In India, this cultural preference for larger families contributes significantly to the country's high population growth rate. Early marriages, particularly of girls, remain prevalent in many parts of India. This practice extends the reproductive period, leading to higher fertility rates and limiting opportunities for girls to pursue education and economic independence. According to the National Family Health Survey (NFHS-5), 23.3% of women aged 20-24 were married before the age of 18[3]. Early marriage often results in early childbearing, which perpetuates cycles of poverty and limits educational and economic opportunities for girls. At the root of all these issues lies the lack of access to education. **Education is a powerful tool for breaking the cycle of overpopulation, yet millions of children, especially girls, lack access to quality education.** This lack of education perpetuates misconceptions about family planning and reinforces gender inequalities. Even when education is available, societal norms often prioritize boys' education over girls', further marginalizing women and limiting their ability to make informed decisions about their reproductive health. The literacy rate for women in India is significantly lower than that for men, with only 62.3% of women being literate compared to 80% of men[4].

Education is a cornerstone of sustainable population control. It empowers individuals, particularly women, to

3. The Economics of Child Marriage – Berkeley Economic Review
4. Educational Disparities Among Girls in India - Ballard Brief

make informed decisions about their reproductive health, delays marriage and childbirth, and reduces fertility rates. Educated women are more likely to participate in the workforce, contributing to economic growth and breaking the cycle of poverty. Moreover, education fosters awareness about environmental sustainability and the importance of responsible resource consumption. By promoting education, especially for girls, we can address the root causes of overpopulation and work towards a more sustainable future.

To tackle the dual challenges of overpopulation and illiteracy, India must:

- Invest in universal education, with a focus on girls' education, to delay marriages and reduce fertility rates.
- Promote awareness about family planning and reproductive health through community-based programs and campaigns.
- Address cultural barriers and misconceptions through targeted interventions that engage local communities and leaders.
- Strengthen policies and programs that empower women, such as increasing the legal marriage age and ensuring access to contraceptives and healthcare services.

By prioritising education and addressing the root causes of overpopulation, India can pave the way for a more sustainable and equitable future, balancing population growth with environmental preservation and socio-economic development.

Speakers

Mr. Zakir Khan
Standup Comedian

Mr. Nitish Bhardwaj
Actor,
Director and Writer

Mr. Zakir Khan, Standup Comedian succinctly highlighted the connection between education and population stabilisation. He underscored the transformative potential of education in addressing systemic challenges like overpopulation and environmental degradation. At its core, education equips individuals with the knowledge and critical thinking skills needed to make informed decisions about family planning, resource management, and sustainable practices. Research has consistently shown that higher levels of education, particularly among women, correlate with lower fertility rates and delayed childbearing, contributing directly to population stabilisation.

Moreover, education fosters a deeper understanding of global challenges such as climate change, resource depletion, and the interdependence of human and environmental health. By creating awareness of the long-term implications of overpopulation, education can inspire collective action toward sustainable living.

It also provides individuals with access to economic opportunities, enabling them to break free from cycles of poverty that often perpetuate high birth rates.

Mr. Khan's insight that education forms the foundation for addressing a multitude of interconnected issues aligns with global policy frameworks like the United Nations Sustainable Development Goals (SDGs). Specifically, Goal 4 (Quality Education) and Goal 13 (Climate Action) highlight the need for educational initiatives to achieve broader developmental and environmental objectives. By integrating population education into curricula and fostering a culture of sustainability, societies can tackle root causes rather than symptoms of overpopulation and its associated challenges.

In summary, Mr Zakir Khan's reflection captures the essence of education as a catalyst for individual empowerment and societal transformation. By addressing the "one core issue" of education, policymakers and stakeholders can unlock a cascade of positive outcomes, including improved living conditions, reduced population growth, and a sustainable future for all.

Mr. Nitish Bhardwaj, Actor, Director and Writer stated that Bharat recognised the critical need for population control as early as 1952, becoming the first developing nation to launch a National Family Planning Program. This initiative was designed to control population growth and reduce the birth rate. While the program marked a significant step forward, it has not fully mitigated the challenge. Today, India's population stands at more than 1.4 billion, highlighting the need for intensified efforts. Addressing population growth requires not only programs and policies but also cultural shifts, particularly in dismantling myths and stigmas, such as those surrounding vasectomy. Educating men about the procedure—emphasising that it does not reduce masculinity, hormonal balance, or sexual ability—remains a crucial component of such efforts.

"Population control has lot of aspects. One is illiteracy and education. Second is awareness. Awareness of the woman, awareness of the man."

Mr. Nitish Bhardwaj
Actor, Director and Writer

One such initiative making significant strides is Mobius Foundation's Akaar Program. It targets newly-wed couples, promoting the idea of smaller families—preferably two children—and spacing births to ensure the health and well-being of the mother. Akaar underscores the importance of educating women, which empowers them to make informed decisions about their reproductive health. Women who are educated are more likely to delay childbearing, reduce the number

of children they have, and better manage their families' overall well-being. Moreover, education helps women assertively communicate with their partners about the necessity of smaller families and sustainable practices.

The program also addresses illiteracy and a lack of awareness among both men and women, which are prime contributors to high population growth rates. By offering home delivery of contraceptives—including male condoms and female pills—and encouraging men to consider vasectomy, Akaar tackles logistical and cultural barriers to family planning. These grassroots efforts are bolstered by campaigns such as Viram, a collaborative initiative with the India Today Group. The name 'Viram', symbolising a temporary pause, reflects the urgent need to halt population growth and reassess sustainable pathways.

On a global scale, the challenges of population growth are profound. The world's population recently surpassed 8 billion and is projected to reach 9.5 billion by 2050. This trajectory exacerbates existing challenges such as resource scarcity, environmental degradation, and socio-economic inequalities. Education is pivotal in this context. Evidence consistently shows that educating girls delays the age at which they have their first child, thereby extending the interval between births and reducing overall fertility rates. Furthermore, educated women are more likely to advocate for family planning, access healthcare resources, and contribute to economic development.

Population control is multifaceted, requiring interventions at the intersections of education, awareness, healthcare, and cultural change. The Mobius Foundation's initiatives exemplify this integrated approach. Through education, awareness campaigns, and accessible resources, they address the root causes of population growth and empower individuals to make informed decisions. However, achieving meaningful change also requires societal buy-in. Men must be equally involved in these efforts, recognising their role in family planning and supporting the health and autonomy of their partners.

Finally, the appeal to control population growth is not just about numbers; it is about envisioning a sustainable future. For Bharat to achieve its aspirations of becoming a global superpower, it must prioritise sustainable population management. By reducing the strain on resources and enhancing the quality of life for all citizens, Bharat can lead by example, showcasing how education and awareness can drive transformative change.

MAIN DISCUSSION POINTS

1. Historical Context

- India was the first country to implement a National Family Planning Program in 1952, but population control remains a challenge.
- The program initially focused on sterilization and later expanded to include a variety of contraceptive methods. Despite efforts, cultural and socio-economic barriers have hindered the program's success.
- Lessons from China's one-child policy and its societal implications: The one-child policy led to a significant gender

imbalance due to a cultural preference for male children

- The policy also resulted in an aging population and a shrinking workforce, creating economic challenges.

2. Current Population Scenario

- India has surpassed China as the most populous country, with 1.42 billion people. This milestone was reached in April 2023, according to United Nations projections[5].
- The population growth rate in India remains higher than in China, contributing to this shift.
- The growing population is straining natural resources and causing environmental imbalances. Increased demand for water, food, and energy is leading to resource depletion.
- Urbanization and deforestation are contributing to habitat loss and biodiversity decline.

3. Causes of Overpopulation

- Poverty and lack of education lead to larger family sizes, as families believe more members mean greater livelihood opportunities.
- Families in poverty often rely on children for labour and support in old age.
- Lack of access to education, especially for girls, perpetuates high fertility rates
- Early marriages, especially of girls, extend reproductive periods and result in more children. Early marriage is prevalent in rural and impoverished areas, where girls are married off to reduce financial burdens.
- This practice increases the likelihood of early and frequent pregnancies
- Cultural misconceptions, such as fears about vasectomy affecting masculinity, hinder family planning efforts. Misconceptions about vasectomy include fears of reduced masculinity and sexual performance
- These cultural beliefs discourage men from participating in family planning.

4. Impact of Overpopulation

- Environmental degradation and resource depletion. Overpopulation accelerates deforestation, pollution, and climate change.
- The strain on natural resources leads to water scarcity and soil degradation.
- Increased poverty and illiteracy, creating a cycle of socio-economic challenges. Overpopulation exacerbates poverty by increasing competition for limited resources and jobs
- Illiteracy rates remain high in overpopulated regions, limiting economic opportunities and perpetuating poverty.

5. Potential Solutions

- Education: Empowering women and men through education to delay marriages and reduce family size. Education, particularly for girls, is linked to lower fertility rates and delayed marriages.

5. Key facts about India's growing population as it surpasses China's population | Pew Research Center

- Comprehensive sex education can improve awareness and use of contraceptives.
- Family Planning: Promoting contraception, sterilisation, and awareness campaigns to control birth rates. Access to a variety of contraceptive methods can help reduce unintended pregnancies
- Awareness campaigns can address misconceptions and promote family planning practices.
- Policy Measures: Increasing the legal marriage age and encouraging women's participation in the workforce.
- Raising the legal marriage age can help reduce early marriages and associated health risks.
- Policies that support women's employment can empower them to make informed reproductive choices.
- Community Initiatives: Programs like the Mobius Foundation's Aakar project, which distributes contraceptives and promotes sterilisation in rural areas.
- Community-based programs can effectively reach underserved populations and promote sustainable practices.
- Collaboration with local leaders and organizations can enhance the impact of these initiatives.

6. Ongoing Initiatives

- Mobius Foundation's Aakar project, which aims to change attitudes toward family size and promote contraceptive use.
- The project focuses on education and distribution of contraceptives in rural areas. It also involves community engagement to address cultural barriers to family planning.
- The Viram campaign by Mobius Foundation, aimed at curbing population growth through awareness and sustainable practices.
- The campaign includes workshops, seminars, and media outreach to promote sustainable population practices.
- It also collaborates with schools and community centres to educate young people about family planning.

7. Future Projections

- Global population is expected to reach 9.7 billion by 2050, with India's population continuing to grow. The United Nations projects significant population growth in high-fertility regions, including India.
- This growth will require substantial efforts to ensure sustainable development and resource management.
- The need for urgent and sustainable population control measures to avoid further socio-economic and environmental crises.
- Implementing effective family planning and education programs is crucial to managing population growth.
- Sustainable practices and policies are needed to mitigate the environmental impact of overpopulation.

Case Studies

NATIONAL

Tamil Nadu

Tamil Nadu has also made significant strides in population control through education and awareness. The state's literacy rate stands at 82.9%, with a strong emphasis on female education. Tamil Nadu's fertility rate has dropped to 1.7 children per woman, thanks to effective family planning initiatives and increased awareness about reproductive health[6]. The state government has implemented various schemes to promote education and delay marriage, contributing to lower birth rates and improved socio-economic conditions.

Maharashtra

Maharashtra has also made significant progress in population control through education and awareness programs. Maharashtra Population Policy focuses on reducing fertility rates through education, healthcare, and women's empowerment. The state has implemented various initiatives to promote family planning and reproductive health[7]. Savitribai Phule Education Scheme, named after the pioneering social reformer, this scheme aims to increase literacy rates among girls by providing scholarships and incentives for education. As a result, the literacy rate in Maharashtra has increased to 82.3%, with a significant impact on reducing fertility rates[8]. The state government has expanded "family planning and contraceptive services" access to a wide range of contraceptive options and family planning services through public health centres and community health workers. This has helped in raising awareness about reproductive health and reducing birth rates.

INTERNATIONAL

Thailand

Thailand provides an excellent international example of successful population control through education and awareness. Thailand's government launched an extensive family planning program (National Family Planning Program) in the 1970s, which included widespread education campaigns and access to contraception. The program successfully reduced the fertility rate from 6.3 children per woman in the 1960s to 1.5 in recent years. The government also focused on improving female education and increasing women's participation in the workforce by their initiate called as Education and Women's Empowerment. As a result, literacy rates improved, and women became more empowered to make informed decisions about their reproductive health. Thailand

6. Literacy Rate of India 2025 - List of States & Union Territories by Literacy Rate
7. Press Release: Press Information Bureau
8. Details of Population Control Programmes in India | Ministry of Health and Family Welfare | GOI

implemented community-based health services that provided education and healthcare at the grassroots level. This approach ensured that even remote areas had access to family planning and reproductive health services.

Outcome and Impact

- **Increased Awareness and Behavioural Change:** Initiatives like the Mobius Foundation's Aakar project and the Viram campaign have raised awareness about the importance of family planning and sustainable population control. Such educational programs and community outreach have begun to shift attitudes toward smaller family sizes and the use of contraceptives.
- **Improved Contraceptive Access and Women Empowerment:** Distribution programs have made contraceptives more accessible, particularly in rural areas, empowering individuals to make informed reproductive choices. Additionally, education and delayed marriages have enabled women to take control of their reproductive health and participate more actively in the workforce.

Call to Action

Individuals

- Learn about the impacts of overpopulation and share this knowledge with the community to promote awareness and behavioural change: Understanding the environmental, social, and economic consequences of overpopulation is crucial. By educating yourself and others, you can help shift societal attitudes towards sustainable practices. For instance, overpopulation leads to resource depletion, increased pollution, and habitat destruction. Sharing this knowledge can inspire community-driven initiatives to address these issues.
- Use contraceptives and support family planning initiatives to contribute to sustainable population control: Access to and use of contraceptives is a key factor in managing population growth. Supporting family planning programs helps ensure that individuals can make informed reproductive choices. For example, the Gates Foundation has committed significant resources to improve contraceptive access globally, highlighting the importance of family planning in achieving sustainable development.
- Support women's education and empowerment, as educated women tend to have fewer children and make informed reproductive choices: Education is a powerful tool for empowering women and reducing fertility rates. Educated women are more likely to delay marriage and childbirth, participate in the workforce, and make informed decisions about their reproductive health. Supporting initiatives that promote girls' education can have a profound impact on population control and socio-economic development.

Government

- Invest in universal education, particularly for girls, to delay marriages and reduce fertility rates: Governments should prioritize education for all, with a special focus on girls. Universal education helps delay marriages and reduces fertility rates, contributing to sustainable population control. For example, the Global Partnership for Education has helped enrol millions of girls in school, demonstrating the transformative power of education.
- Increase the legal marriage age, promote women's participation in the workforce, and ensure access to affordable contraceptives and family planning services: Raising the legal marriage age can help delay childbearing and improve educational and economic opportunities for women. Additionally, promoting women's participation in the workforce and ensuring access to affordable contraceptives are essential for empowering women and managing population growth.
- Partner with NGOs and local organisations to scale up successful programs like the Mobius Foundation's 'Aakar' project and the 'Viram' campaign, ensuring they reach underserved areas: Collaborating with NGOs and local organizations can help scale successful population control programs. The Mobius Foundation's Aakar project and the Viram campaign have shown promising results in raising awareness and promoting sustainable practices. Governments can support these initiatives by providing funding, resources, and policy support to ensure they reach underserved areas.

Conclusion

The episode underscores the urgency of addressing overpopulation in India through a multifaceted approach that prioritises education, policy reforms, and community-driven initiatives. Education serves as the cornerstone of this effort, particularly in empowering women and fostering awareness about family planning and reproductive health. By integrating population education into school curricula and promoting adult literacy programs, society can instil a deeper understanding of the social, economic, and environmental impacts of overpopulation.

Policy reforms must complement educational efforts by providing access to affordable healthcare, family planning services, and incentives for smaller families. Robust legislation can further ensure the availability of resources necessary to meet the growing demands of a burgeoning population while promoting sustainable practices in resource consumption and urban development.

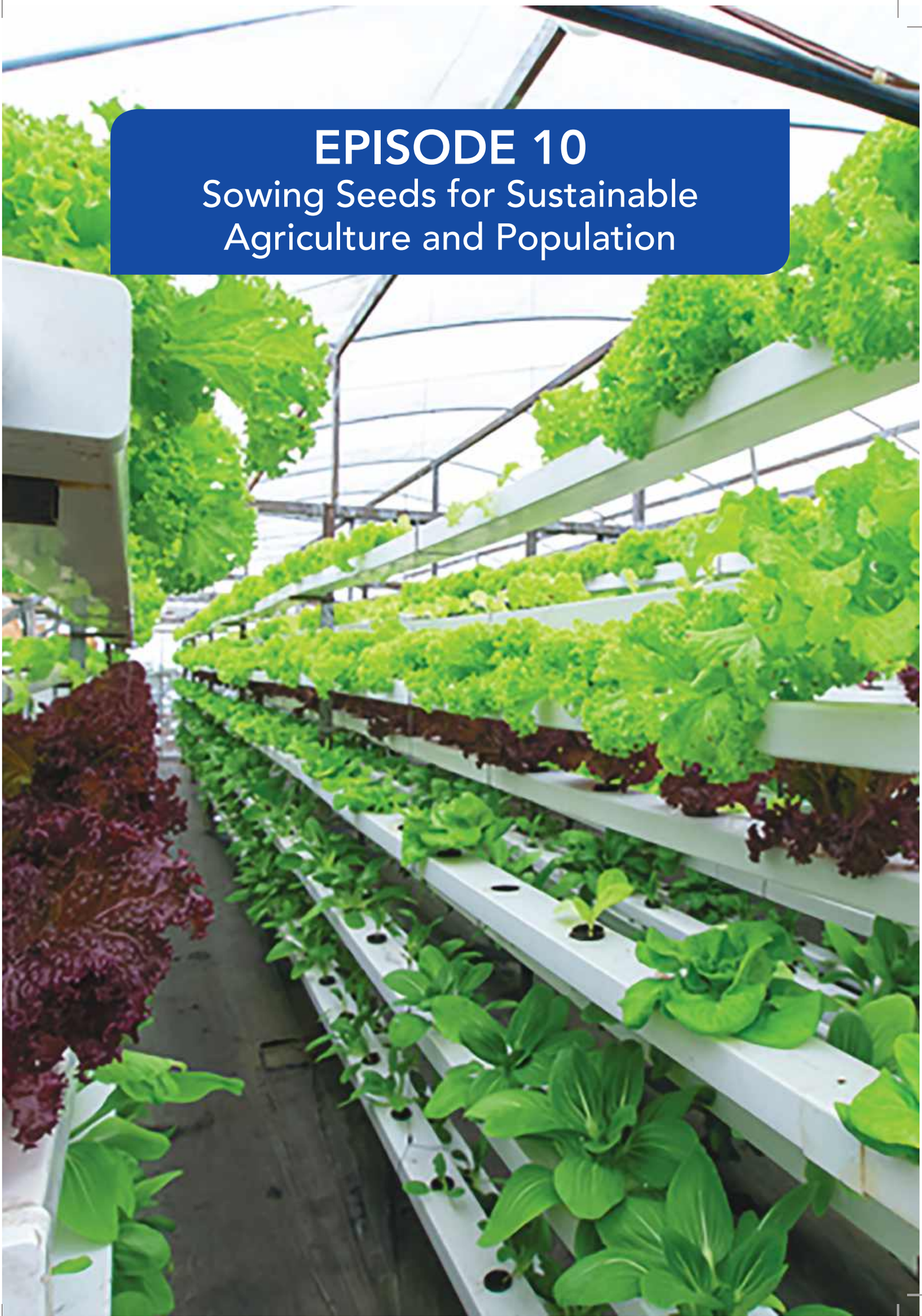
Community-driven initiatives, rooted in local needs and cultural contexts, are equally vital. Grassroots organisations and NGOs play a pivotal role in mobilising communities, facilitating dialogue, and

implementing targeted interventions that address overpopulation at the micro level. These efforts must be supported by strong partnerships with governments and private sector stakeholders to ensure scalability and impact.

The path to a sustainable future lies in collaborative efforts between governments, NGOs, and communities. By integrating education, enabling policy environments, and grassroots participation, India can pave the way toward a future where population growth is balanced with resource availability, and the aspirations of individuals align with the collective well-being of society and the planet.

EPISODE 10

Sowing Seeds for Sustainable Agriculture and Population



Episode 10 : Sowing Seeds for Sustainable Agriculture and Population

Episode Synopsis

The rapid escalation in global population presents considerable ramifications for agriculture. According to the United Nations, the global demographic is anticipated to approach nearly 10 billion by the year 2050[1] and one of the principal impacts of population growth is on agriculture to meet the ever-increasing demand of food production. The Food and Agriculture Organization (FAO) posits that food production must escalate by 70% by 2050 to satisfy the requirements of the burgeoning population[2]. This heightened demand, however, propels the expansion of agricultural land, often at the detriment of forests and other natural habitats; consequently, this leads to deforestation and loss of biodiversity[3].

Furthermore, intensive agricultural practices designed to enhance productivity can result in soil degradation, notably, reduced soil fertility and an augmented reliance on chemical fertilizers and pesticides[4]. These methods, however, not only adversely affect the environment but also present significant health risks to both humans and animals. Water resources, on the other hand, are increasingly strained, considering that agriculture constitutes approximately 80% of global freshwater withdrawals. The over-extraction of water for irrigation purposes can consequently lead to aquifer depletion and diminished water availability for alternative uses.

Climate change significantly exacerbates the myriad challenges confronted by the agricultural sector. The alteration of weather patterns, coupled with an increased frequency of extreme weather events and rising temperatures, adversely affects both crop yields and livestock productivity.

Technological advancements, along with sustainable agricultural practices, present potential remedies to alleviate the consequences of population growth on agriculture. Innovations such as precision farming, genetically modified organisms (GMOs) and enhanced irrigation techniques have the capacity to augment productivity while simultaneously minimising environmental degradation. However, the implementation of these technologies frequently encounters limitations due to economic, social and infrastructural barriers. Although these advancements hold promise, they remain underutilised in many contexts, primarily because of systemic challenges that hinder access and adoption.

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1. UN calls for urgent action to feed the world's growing population healthily, equitably and sustainably - United Nations Sustainable Development
2. Overpopulation and Its Impact: A Call for Collaborative Action - fundsforNGOs - Grants and Resources for Sustainability
3. UN Secretary-General Call to Action
4. The Impacts of a Growing Population on Agriculture

Problem Statement

India's growing population is exerting significant pressure on the agricultural sector. As the demand for food increases, the depletion of natural resources such as land, water, and soil health becomes a critical issue. This problem is compounded by urbanization, industrial development, and climate change. The continued reliance on resource-intensive agricultural practices is unsustainable and leads to soil degradation, reduced agricultural productivity, and food insecurity. Population stabilization is crucial to reducing pressure on these resources and ensuring that future generations inherit a sustainable agricultural system.

Speakers

Dr. Ram Boojh
Advisor, Mobius Foundation

Mr. Nekram Sharma
Farmer and
Padma Shri Awardee

MAIN DISCUSSION POINTS

1. Increased Food Demand for Increasing Population

- **Rising Population:** As the global population increases, food demand escalates significantly. The surge in population not only requires more basic sustenance but also intensifies competition for food resources across regions.
- **Changing Diets:** Economic development often leads to dietary shifts towards more resource-intensive foods such as meat and dairy. This, in turn, further increases the demand for agricultural products.

  Dr. Ram Boojh: "The agricultural sector, being the primary provider of food and livelihoods, is at the epicenter, bearing the brunt of the pressures created by an expanding population."

2. Land Use and Deforestation

- **Expansion of Farmland:** To meet the growing food demand, more land is cleared for agricultural use, which often results in deforestation and loss of natural habitats. This transformation alters land use patterns and disrupts local ecosystems.
- **Soil Degradation:** Intensive farming practices can lead to soil erosion, nutrient depletion, and reduced soil fertility, making it harder to sustain agricultural productivity in the long term.

3. Impact on Water Resources

- **Increased Irrigation Needs:** As the need for food grows, agricultural water consumption increases,

placing pressure on surface and groundwater resources.

- **Water Pollution:** Agricultural runoff, laden with fertilizers and pesticides, contaminates water bodies. This contamination can affect human health and damage aquatic ecosystems.

  Mr. Nekram Sharma: "As cities expand and infrastructure projects take precedence, vast tracts of fertile farmland are being sacrificed. This loss is compounded by climate change, which is altering weather patterns, reducing agricultural productivity, and exacerbating food insecurity."

4. Environmental Impact

- **Greenhouse Gas Emissions:** Agriculture contributes significantly to greenhouse gas emissions, particularly methane from livestock and nitrous oxide from fertilized soils. Reducing these emissions is essential for meeting global climate targets and ensuring a sustainable future for food production.
- **Biodiversity Loss:** The conversion of forests and grasslands into agricultural land reduces biodiversity, compromising ecosystem services such as pollination and pest control that are crucial for agricultural productivity.

5. Food Security

- **Production Challenges:** Overpopulation can lead to food shortages, as agricultural production may fail to keep pace with population growth, resulting in higher prices and greater vulnerability for low-income populations.
- **Distribution Issues:** Even if food production is sufficient, overpopulation can exacerbate food distribution problems, leading to food insecurity in certain regions.

6. Technological Innovation and Sustainable Practices

- **Technological Advancements:** Innovations such as precision farming, genetically modified crops, and sustainable farming practices are key to enhancing agricultural productivity while minimizing environmental impacts.
- **Sustainable Agriculture:** Practices such as crop rotation, agroforestry, and organic farming can mitigate negative impacts on soil fertility, restore ecosystems, and ensure long-term food security.

7. Economic and Social Implications

- **Strain on Rural Areas:** Overpopulation often leads to migration from rural to urban areas, putting additional pressure on city infrastructure and services. The agricultural sector must adapt to provide employment opportunities for a growing population, especially in resource-limited regions.
- **Investing in Education and Training:** Empowering rural communities through education and sustainable agricultural practices can provide economic resilience and help meet the demands of a growing population.

  Dr. Ram Boojh: "To address these, it is essential to adopt a multi-pronged approach that integrates

population stabilization, sustainable agricultural practices, and environmental conservation."

Points to Ponder:

- **Role of Education in Population Stabilization:** Educating communities about family planning and reproductive health is crucial in managing population growth. By reducing population growth rates, we can ease the pressure on agricultural systems and natural resources.
- **Sustainable Farming as a Solution:** Promoting agroecology, crop diversification, and water-efficient irrigation could play a pivotal role in enhancing food security while minimizing environmental harm.
- **The Need for Policy Interventions:** Governments and policymakers need to create and enforce policies that promote sustainable agricultural systems. This includes incentivizing the adoption of climate-friendly technologies and addressing the systemic issues of food distribution to ensure equity.

  Mr. Nekram Sharma: "A significant transformation is required in the way farming is practiced. Modern, resource-intensive agricultural methods have often prioritized short-term gains over long-term sustainability."

Key Questions for Discussion:

1. How can countries balance the growing demand for food with the need to conserve natural resources?
2. What policies can help ensure that the agricultural sector remains both productive and sustainable in the face of a growing population?
3. How can we encourage the adoption of sustainable farming methods on a global scale, especially in developing regions with limited resources?
4. What are the best ways to address food distribution inequities, especially in areas where food insecurity is exacerbated by overpopulation?

Case Studies

National

1. Punjab: Impact of the Green Revolution on Soil Health and Water Resources

The Green Revolution in Punjab, initiated in the 1960s, aimed to increase food production through high-yielding varieties of crops, particularly wheat and rice. This led to the extensive use of chemical fertilizers and pesticides, which initially boosted yields but resulted in significant environmental degradation. Farmers shifted from traditional rain-fed crops to water-intensive varieties, leading to a dramatic increase in groundwater extraction for irrigation. By 2013, Punjab was experiencing severe groundwater depletion, with overdraft levels reaching unsustainable rates due to the cultivation of rice, which required approximately 5,000 liters of water to produce just one kilogram[5].

5. Did green revolution in Punjab lead to groundwater over exploitation revolution due to MSP?

In response to these challenges, various interventions have been proposed and implemented. Efforts include promoting sustainable agricultural practices such as crop rotation and the use of less water-intensive crops. Additionally, initiatives aimed at enhancing groundwater recharge through rainwater harvesting and artificial recharge have shown promising results. For example, projects in areas like Moga district successfully raised water levels by implementing infiltration techniques[6]. These measures not only help restore aquifer levels but also encourage farmers to adopt more sustainable practices that balance productivity with environmental health.

2. Maharashtra: Challenges of Drought and Water Management in Agriculture

Maharashtra faces chronic drought conditions exacerbated by overpopulation and mismanagement of water resources. The state's reliance on monsoon rains for agriculture has made it vulnerable to fluctuations in rainfall patterns. Over the years, rapid urbanization and population growth have led to increased competition for water resources, straining agricultural practices that are already under pressure from climate change impacts[7]. To address these issues, Maharashtra has implemented various water management strategies, including watershed development programs that focus on rainwater harvesting and soil conservation techniques. These initiatives aim to improve water availability during dry periods and enhance agricultural resilience. Additionally, the state has promoted crop diversification away from water-intensive crops like sugarcane towards more drought-resistant varieties. These interventions have led to improved soil moisture retention and better crop yields during dry spells, demonstrating a positive shift towards sustainable agricultural practices[8].

International

1. Brazil: Deforestation in the Amazon for Agricultural Expansion

The expansion of agriculture in Brazil, particularly for soy cultivation and cattle ranching, has led to significant deforestation in the Amazon rainforest. This phenomenon began in earnest during the late 20th century as global demand for soy and beef surged. The clearing of forests not only contributes to biodiversity loss but also exacerbates climate change by releasing stored carbon dioxide into the atmosphere[9].

In recent years, Brazil has made strides towards mitigating deforestation through policies aimed at sustainable land use. The introduction of the Forest Code in 2012 mandated that landowners maintain a percentage of their property as forested area. Additionally, initiatives like the Amazon Fund have provided financial support for conservation projects aimed at reducing deforestation rates. These efforts have resulted in a notable

6. Groundwater Irrigation in Punjab: Some Issues and Way Forward
7. The Green Revolution and a dark Punjab
8. MWS | Green Revolution in India and its Impact on Water Resources
9. Revisiting the Impacts of the Green Revolution in India | Institute for Policy and Governance | Virginia Tech

decline in deforestation rates since their peak around 2004, showcasing how targeted interventions can lead to positive environmental outcomes while still supporting agricultural productivity[10]. Through these case studies, it is evident that while overpopulation presents significant challenges to agriculture, proactive measures focused on sustainability can lead to positive changes that benefit both the environment and farming communities.

Outcome and Impact

The episode highlighted the critical need for sustainable agricultural practices to address the challenges posed by population growth. Key outcomes include:

Enhanced Awareness: The growing recognition of the intricate relationship between population growth and agricultural sustainability has become increasingly vital in recent years. As the global population continues to rise, the demand for food, water, and land resources intensifies. This awareness has led to a broader understanding of how unsustainable agricultural practices contribute to environmental degradation, including soil erosion, water scarcity, and loss of biodiversity. Educational initiatives and research efforts have highlighted the need for sustainable practices that can meet the food demands of a growing population while preserving natural ecosystems. This enhanced awareness is crucial for fostering a collective responsibility among governments, farmers, and consumers to adopt practices that ensure long-term agricultural viability and environmental health.

Policy Recommendations: Effective policy frameworks are essential for promoting sustainable agricultural practices that address the challenges posed by overpopulation. Policymakers are increasingly recognising the need for comprehensive strategies that integrate sustainable land use, efficient water management, and soil health improvement. Recommendations include strict implementation of regulations that limit land conversion from agriculture to urban land use and incentivising practices such as crop rotation and organic farming. Additionally, policies aimed at improving irrigation efficiency—such as subsidies for drip irrigation systems—can significantly reduce water consumption in agriculture. Government should increase investment in research and development initiatives that focus on sustainable agricultural technologies and practices. By creating a supportive policy environment, stakeholders can ensure that agricultural systems are resilient and capable of sustaining future generations.

Technological Innovations: Technological advancements are playing a pivotal role in enhancing agricultural productivity and promoting sustainability. Innovations such as precision agriculture, which utilises data analytics and satellite imagery to optimise crop management, allow farmers to apply

10. The Green Revolution and a dark Punjab

inputs more efficiently reducing waste and minimising environmental impact. The development of genetically modified organisms (GMOs) has also contributed to increased yields and pest resistance, helping farmers adapt to changing climatic conditions. Furthermore, emerging technologies like vertical farming and aquaponics present opportunities for urban agriculture by maximising space and resource efficiency. These innovations not only improve food security but also help mitigate the adverse effects of overpopulation on agricultural systems by making them more resilient to climate change and resource scarcity.

Community Engagement: Community engagement is essential for fostering sustainable agricultural practices at the grassroots level. Involving local communities in decision-making processes related to land use, resource management, and agricultural practices ensures that solutions are tailored to specific regional needs. Programs that encourage farmer cooperatives can facilitate knowledge sharing and collective action towards sustainable farming methods. Additionally, educational initiatives aimed at teaching sustainable practices—such as organic farming techniques or water conservation strategies—empower communities to take charge of their agricultural futures. Successful examples include community-led reforestation projects that enhance soil health while providing additional income through agroforestry. By actively engaging communities in sustainability efforts, we can create resilient agricultural systems that contribute positively to local economies and ecosystems.

Global Cooperation: The challenges posed by overpopulation on agriculture are not confined by national borders; thus, global cooperation is crucial for addressing these shared issues effectively. International organizations, governments, NGOs, and private sectors must collaborate to develop comprehensive strategies that promote sustainable development worldwide. Initiatives such as the United Nations' Sustainable Development Goals (SDGs) emphasize the importance of partnerships in achieving food security while ensuring environmental sustainability. Collaborative research efforts can lead to shared knowledge on best practices in agriculture across different regions, enhancing resilience against climate change impacts globally. Additionally, international trade agreements can be structured to support sustainable agricultural products while discouraging practices that lead to environmental degradation. By fostering a spirit of cooperation among nations, we can collectively tackle the challenges posed by population growth on agriculture while promoting sustainable development for future generations.

Call to Action

As the challenges of overpopulation and its impacts on agriculture become increasingly evident, a collective call to action is necessary. This encompasses the roles of individuals, governments, and communities in promoting sustainable practices that ensure food security while protecting our environment.

Individuals

1. **Sustainable Consumption:**

- Reduce food waste and support sustainable food choices. Individuals play a crucial role in shaping agricultural sustainability through their consumption habits.
- By reducing food waste consumers can significantly lessen the environmental impact associated with food production, including land use, water consumption, and greenhouse gas emissions.
- Simple actions such as planning meals, storing food properly, and using leftovers creatively can contribute to waste reduction.
- Additionally, supporting sustainable food choices such as purchasing locally grown produce, organic products, or foods with lower environmental footprints encourages agricultural practices that are more environmentally friendly.

2. **Awareness and Education:**

- Education is a powerful tool in fostering awareness about the interconnectedness of population growth, agriculture, and sustainability.
- Individuals can take initiative by educating themselves about the challenges posed by overpopulation on agricultural systems and the environment. This knowledge can empower them to advocate for sustainable practices within their communities.
- Engaging in discussions, attending workshops, or participating in local sustainability initiatives can amplify their voice.
- Furthermore, sharing information through social media or community events can raise awareness among peers and encourage collective action towards sustainability.
- By becoming informed advocates for sustainable agriculture, individuals can influence policy decisions and promote practices that benefit both people and the planet.

Government

1. **Policy Implementation:**

- Government has a critical responsibility to implement and enforce policies that protect natural resources while promoting sustainable agricultural practices. National Mission for Sustainable Agriculture (NMSA) policy is an initiative in this direction.
- Government should also create incentives for farmers who adopt sustainable practices like The Crop Diversification Programme (CDP) encourages farmers to grow a variety of crops instead of just one. The program is part of the Rashtriya Krishi Vikas Yojana (RKVY).
- By prioritizing environmental protection in agricultural policies, governments can ensure that natural resources are preserved for future generations while supporting the livelihoods of farmers like Pradhan Mantri Krishi Sinchayee Yojana (PMKSY) is a government scheme that aims to improve water access and on -farm water use efficiency by using water saving technologies (More crop per drop)

2. **Investment in Research:**

- Investing in research is essential for developing innovative solutions to the challenges of overpopulation on agriculture.
- Governments should allocate funding to research institutions focused on sustainable agricultural technologies that enhance productivity while minimizing environmental impact.
- This includes exploring advancements in precision agriculture, biotechnology, soil health management, and climate-resilient crops.
- Collaborative research efforts between universities, private sectors, and agricultural organizations can lead to breakthroughs that improve efficiency and sustainability in farming practices.
- By prioritising research and development, governments can equip farmers with the tools they need to adapt to changing conditions while ensuring food security.

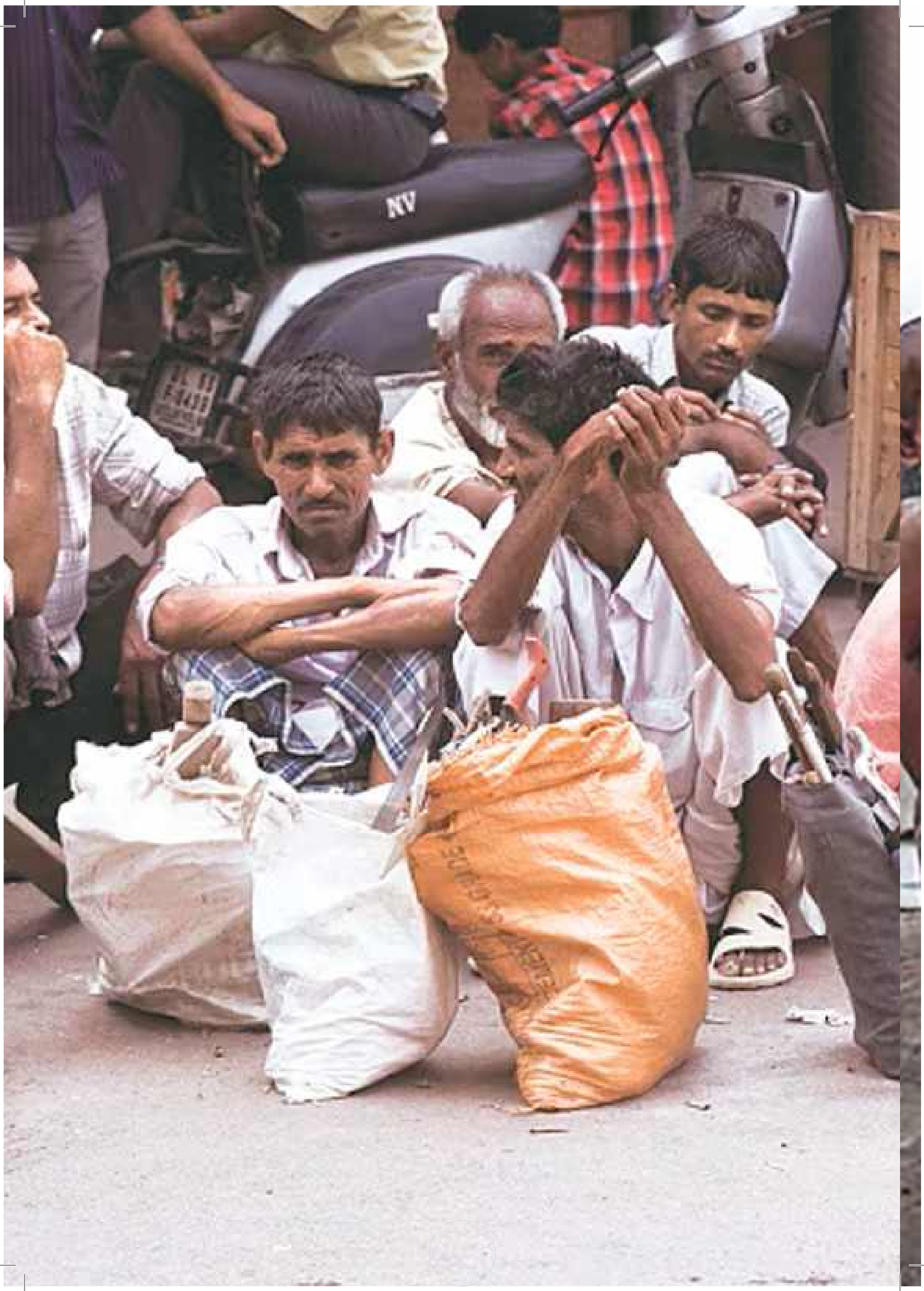
3. **Support for Farmers:**

- Smallholder farmers often face significant barriers in transitioning to sustainable agricultural practices due to limited resources and access to technology. Government should provide targeted financial assistance, such as low-interest loans or grants, to support these farmers.
- Additionally, offering technical training programs can equip farmers with knowledge about best practices in sustainable agriculture, including soil management techniques, integrated pest management, and water conservation strategies.
- By empowering smallholder farmers through support systems that facilitate access to resources and knowledge, governments can foster a more resilient agricultural sector capable of meeting the demands of a growing population.

Conclusion

The population expansion presents significant challenges to the sustainability of agriculture in terms of the demand for food, water, and other resources escalating dramatically. This surge puts immense pressure on agricultural systems, leading to overexploitation of land and water resources, increased greenhouse gas emissions, and heightened food insecurity. The relationship between population growth and agricultural sustainability is complex; it encompasses not only the need for increased food production but also the necessity of preserving the environment for future generations. Addressing these challenges requires a multifaceted approach that integrates technological innovation, sustainable practices, and supportive policies. Technological innovations such as precision agriculture, genetically modified crops, and sustainable farming techniques can enhance productivity while minimizing environmental impact. For instance, advancements in irrigation technology can optimize water use in regions facing scarcity, while data analytics can help farmers make informed decisions about crop management. Moreover, sustainable practices must be at the forefront of agricultural strategies. This includes

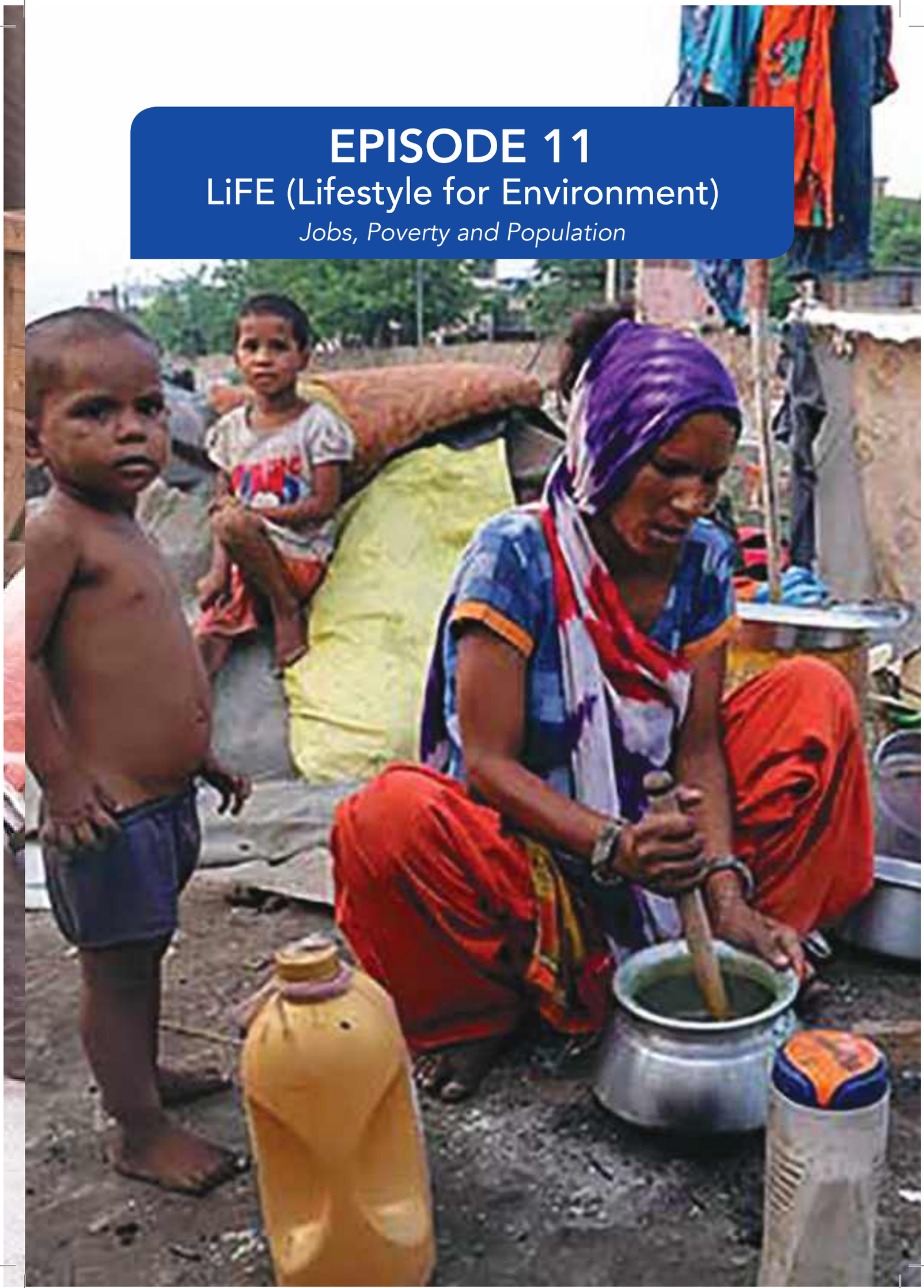
promoting agroecological methods that enhance biodiversity, improve soil health, and reduce reliance on chemical inputs. By adopting practices such as crop rotation, cover cropping, and organic farming, we can create resilient agricultural systems that not only meet current food demands but also safeguard natural resources for future generations. Supportive policies are critical in facilitating this transition towards sustainability. Governments must implement regulations that protect natural resources and incentivize sustainable agricultural practices. Investment in research and development is essential to foster innovation in sustainable technologies and practices that can adapt to changing environmental conditions.



EPISODE 11

LiFE (Lifestyle for Environment)

Jobs, Poverty and Population



Episode 11 : LiFE (Lifestyle for Environment)

Jobs, Poverty and Population

Episode Synopsis

Population dynamics exerts a profound influence on the prospects for poverty alleviation and sustainable development. Poverty is both shaped by and contributes to various population factors (e.g., growth, age distribution and rural-urban migration). These elements play a huge role in determining a nation's developmental potential and its capacity to enhance living standards for individuals residing in impoverished conditions. India, a nation endeavouring to attain developed status by Viksit Bharat 2047, is currently experiencing substantial rural-to-urban migration, ranking second globally in this regard. This migration, however, is compounded by a deficiency in adequate employment opportunities, thereby exacerbating both unemployment and poverty. Although India is the fourth-largest economy, its unemployment rate hovers around 8%, with urban locales struggling to accommodate the influx of youthful labour. The situation is further complicated by a skills gap, wherein rural migrants often lack the requisite qualifications for organised sector employment. Poverty, driven by insufficient education and resources, perpetuates a vicious cycle of overpopulation and unemployment. Immediate action is necessary to tackle these intertwined issues, focusing on education, skill development and sustainable population control; this will be essential for breaking the cycle and fostering long-term sustainable development.

Problem Statement

India's rapid population growth, coupled with a significant rural-to-urban migration, has resulted in a marked disparity in job availability and resource allocation, presenting a formidable challenge to achieving Sustainable Development Goal (SDG) 8: Decent Work and Economic Growth. The country's population is expanding at a pace that outstrips its economic growth, creating mounting pressure on the job market and public infrastructure. In 2024, India's population reached approximately 1.44 billion[1], with an annual growth rate of around 1%[2], a trend that continues to fuel competition for jobs, resources, and social services.

The issue is particularly acute in urban centres, where the influx of migrants seeking better opportunities has outpaced the growth of infrastructure, resulting in overcrowding, strained resources, and an escalating unemployment crisis. According to the Centre for Monitoring Indian Economy (CMIE), India's unemployment rate stood at 7.8% in September, 2024[3], with youth unemployment significantly higher, reflecting a glaring mismatch between the supply of labour and the demand for jobs. Moreover, a large portion of the workforce is engaged in informal labour, with nearly 90% of the total workforce working in the informal sector, where job security, wages, and benefits remain inadequate.

This challenge is compounded by insufficient access to quality education and skill development programs. Many workers, especially those in rural areas, lack the necessary qualifications to meet the demands of a rapidly changing job market. As a result, there is a growing disconnect between the skills available in the workforce and those required by contemporary industries. This mismatch has created a cycle of low wages, underemployment, and stagnation, which perpetuates poverty and hinders upward mobility for millions of Indians. According to the National Sample Survey (NSS) data, approximately 90% of Indian workers are engaged in low-productivity sectors such as agriculture and informal services, where wages remain stagnant.

In rural areas, the situation is no better. The over-reliance on agriculture, coupled with limited industrialization, has left many communities trapped in poverty, lacking sufficient income or job security. The lack of local employment opportunities prompts a mass migration to urban areas, intensifying the already strained resources and job market of cities. As a result, the urban poor often end up in informal housing, with limited access to essential services like healthcare, sanitation, and education. This migration further exacerbates the urban poverty crisis, creating a vicious cycle of inequality and social exclusion.

Overpopulation also places immense pressure on India's welfare systems, which are already overstretched. Public resources

1. UNFPA – State of World Population Report, 2024
2. Our World in Data - Population growth rate, 1950 to 2023
3. CMIE, September, 2024

allocated for education, healthcare, and employment generation are insufficient to meet the growing needs of the population. This limited resource allocation makes it increasingly difficult for the government to address the root causes of unemployment and poverty, further hindering national development. According to the Ministry of Statistics and Programme Implementation, India's public expenditure on education and healthcare remains well below the global average, which limits the potential for human capital development.

This interconnected crisis of population, unemployment, and poverty threatens India's long-term economic stability and social equity. The challenge to achieving SDG 8 lies in addressing the systemic barriers to job creation, skill development, and equitable access to resources. Without comprehensive reforms, India risks undermining its demographic dividend, where its youthful population could otherwise drive economic growth.

A holistic approach is urgently needed to address these complex issues. Key actions include robust policy reforms, increased investments in education and vocational training, and the creation of sustainable employment opportunities across diverse sectors. By focusing on the root causes of unemployment and underemployment, India can unlock its full potential, fostering inclusive growth and reducing poverty. However, this can only be achieved through a concerted effort to balance population growth with sustainable development practices, ensuring that the benefits of progress are shared equitably across all segments of society. Without these critical interventions, India's path to sustainable development remains uncertain, and its progress will continue to be hindered by the current structural challenges.

Speakers

Mr. Praveen Garg
IAS (Rtd.), President - Mobius Foundation

Dr. Ram Boojh
Advisor, Mobius Foundation

Mr. Akash Ranison
Environmentalist, Co-founder and Director, Greener Earth Foundation

MAIN DISCUSSION POINTS AND QUOTES BY SPEAKERS:

1. **Overpopulation and Urban Migration:** The rapid migration from rural to urban areas has placed significant pressure on cities, leading to overcrowding, strained infrastructure, and heightened competition for limited resources. Dr. Ram Boojh, Advisor at Mobius Foundation, highlighted that rural-to-urban migration has created a vast skill gap, particularly among migrants from agricultural backgrounds. These individuals often lack formal education or vocational training, which hinders their ability to find stable jobs in the formal

economy, leading many to work in the informal sector under poor conditions.

"Rural migrants face an uphill battle when they arrive in cities. Limited access to education and vocational training creates a significant skill gap, which results in many migrants being stuck in underpaid, low-status jobs with poor working conditions."
- Dr. Ram Boojh

2. **Unemployment and Skill Gap:** As India's population grows, there is a growing mismatch between the number of people entering the workforce and the number of available jobs, especially in the organized sector. This shortage is worsened by the fact that many job seekers lack the necessary skills for the modern workforce. Mr. Praveen Garg, IAS (Rtd.), President - Mobius Foundation, pointed out that urban areas, while perceived as hubs of opportunity, are unable to meet the overwhelming demand for employment.

   "The demand for jobs in urban centers far exceeds the available supply. This leads to fierce competition among job seekers, and many end up in low-wage, insecure jobs. The job crisis in cities is largely driven by the massive migration from rural areas where agriculture is no longer sustainable for growing families." **- Mr. Praveen Garg**

3. **Poverty and Education:** The lack of access to quality education for families living in poverty perpetuates the cycle of poverty, as children from disadvantaged backgrounds are less likely to break free from their economic circumstances. Mr. Akash Ranison, an environmentalist and co-founder of the Greener Earth Foundation, emphasized that this issue is compounded by limited family planning awareness, where larger families are seen as economic support despite the challenges this presents.

   "In many rural areas, families have more children as a means of economic support. However, this only adds to the burden of poverty, as the children lack access to quality education and resources that could help break the cycle." **- Mr. Akash Ranison**

4. **Economic and Environmental Impact:** Overpopulation leads to unsustainable consumption of resources, which accelerates environmental degradation. This increased demand for goods and services puts pressure on natural resources, leading to deforestation, water scarcity, and pollution. As Mr. Akash Ranison pointed out, the environmental impact of overpopulation has long-term consequences for the country's agriculture, health, and overall quality of life.

   "The growing population drives up consumption, leading to unsustainable resource usage. This increases environmental degradation, which in turn affects agricultural productivity and public health, creating an ongoing strain on India's future development."
   - Mr. Akash Ranison

5. **Need for Policy Intervention:** Addressing the challenges of overpopulation requires comprehensive policy reforms. Dr. Ram Boojh suggested the importance of focusing on skill development

initiatives, improving access to quality education, and promoting sustainable population control through family planning measures. These interventions are necessary to break the cycle of poverty and ensure long-term economic stability.

"Policy interventions must focus on skill development for migrants, family planning, and access to quality education. Only by addressing these key areas can we ensure that India's growing workforce contributes positively to economic growth."
- Dr. Ram Boojh

6. **Interconnection Between Overpopulation, Poverty, and Resource Strain:** The increasing population exacerbates poverty by limiting access to education and jobs, which in turn creates further strain on already overburdened resources. Mr. Praveen Garg pointed out the vicious cycle of overpopulation leading to resource scarcity and deepening poverty. Without targeted interventions, it becomes difficult to break this cycle.

   "Overpopulation intensifies the strain on resources. As the population grows, so does the demand for resources, leading to overexploitation. This deepens poverty and creates a cycle that is hard to escape."
   - Mr. Praveen Garg

7. **Policy and Industry Dynamics:** The rise of automation and AI in various industries reduces the demand for human labor, leading to increased unemployment, especially in sectors that previously provided stable jobs. Mr. Akash Ranison stressed that these shifts require robust policies on education, skill development, and family planning to adapt to a rapidly changing job market.

   "Technological advancements are reducing the need for human labor, which is exacerbating unemployment and widening economic inequality. Policies must prioritize skill development to ensure that workers can adapt to these changes."
   - Mr. Akash Ranison

Case Studies

National

Kerala

Kerala's approach to managing population growth and alleviating poverty provides a strong example of how effective social policies can foster economic development. Despite being one of India's most densely populated states, Kerala has controlled its population growth through initiatives like improved healthcare, high literacy rates (93.91%), and a focus on women's education and family planning, with a contraceptive prevalence rate of 54.3%.

https://www.reuters.com/world/india/indias-economy-faces-slowing-growth-volatile-trade-ahead-new-financial-year-2025-01-29/?utm_source=chatgpt.com

https://www.ft.com/content/dcb200fd-7621-4b58-9614-b5a4aa2ce7ea?utm_source=chatgpt.com

These efforts have resulted in a significantly lower poverty rate of 0.55%, far below the national average. By prioritizing healthcare and education, the state has created a healthier, more educated workforce that is better equipped for the job market. This has led to better job opportunities, increased productivity, and overall economic growth, demonstrating how managing population growth, coupled with strategic social investments, can break the cycle of poverty and support sustainable development.

Nagaland

Over the past few decades, Nagaland has managed to maintain a relatively stable population while significantly increasing its literacy rate through various targeted initiatives. The Saakshar Bharat Scheme, focusing on adult education, particularly among women, played a pivotal role in this transformation. The state government unveiled the Nagaland SDG Vision 2030, aiming for 100% literacy by 2030, and strengthened anganwadi centers and early childhood education.[4]

Significant investments were made to improve educational infrastructure, establish a Human Resource Development Centre, and digitize schools and higher education institutions. Additionally, vocational training and substantial financial investments in education further contributed to this progress. These efforts resulted in a remarkable increase in literacy rates from 55.5% in 1991 to approximately 80.1% in 2021, showcasing the positive impact of these initiatives.[5] This resulted into better job opportunities and further enhancing economic stability in the state.

International

Bangladesh

Bangladesh is known for its inspiring story of reducing poverty and advancing development. One of the world's most densely populated countries, has made this significant progress through targeted interventions. The data depicts 50% reduction in the country's poverty since 2000. Almost 25 million people were lifted out of poverty in the last 15 years further enhancing the economy of the country despite many challenges. All sectors of the economy have contributed to poverty reduction. However, comprehensive family planning programs have significantly reduced fertility rates, increased life expectancy, further contributing to increase households' ability to earn more and exit poverty.[6] Investments in education and vocational training equipped the workforce with relevant skills, while microfinance initiatives by organizations like Grameen Bank and BRAC empowered marginalized communities and fostered economic independence. Economic diversification into sectors such as textiles and IT created new job opportunities. These efforts collectively reduced unemployment and poverty, improved quality of life, and demonstrated the effectiveness of a comprehensive approach to sustainable development.

4. https://statisticstimes.com/demographics/india/nagaland-population.php
5. https://www.census2011.co.in/census/state/nagaland.html
6. https://www.worldbank.org/en/results/2018/11/15/bangladesh-reducing-poverty-and-sharing-prosperity

Outcome and Impact

Economic and Social Strain: The combination of overpopulation, unemployment, and poverty is creating a vicious cycle that significantly hinders India's development. Overpopulation leads to increased competition for limited job opportunities, exacerbating unemployment and underemployment. Without adequate job creation and skill development, the potential demographic dividend could turn into a demographic burden, as a large, unskilled workforce struggles to find meaningful employment. Additionally, the lack of education and awareness among poorer families about family planning and sustainable living practices contributes to unchecked population growth, further straining already limited resources. This unchecked growth puts immense pressure on infrastructure, healthcare, education, and social services, making it challenging to improve the overall quality of life and achieve sustainable development. Addressing these issues requires comprehensive policy interventions focused on education, skill development, and family planning to break the cycle and promote balanced, inclusive growth.

Policy Implications and Long-Term Vision: There is an urgent need for comprehensive policies that address population control, education reform, and skill development. While there are many policies like Atmanirbhar Bharat Rojgar Yojana (ABRY) by Ministry of Labour and Employment launched during Covid in October, 2020 as part of Atmanirbhar Bharat package 3.0 which incentivized the employers for creation of new employment along with social security benefits and restoration of loss of employment during Covid-19 pandemic. The initiative has played a significant role in reviving the job market, contributing to the broader economic recovery during the pandemic. Pradhan Mantri Rojgar Protsahan Yojana (PMRPY), another initiative by Ministry of Labour and Employment launched in 2016 with the aim of increasing employment[7]. The beneficiaries registered upto 31st March, 2019 received the benefits for 3 years from the date of registration under the scheme, MNREGA and many more which are focusing on alleviation of poverty but there is a need of robust and comprehensive programme focusing on importance of balancing population growth with sustainability. Laws and awareness campaigns are needed to promote family planning and responsible parenting, particularly among low-income families. Initiatives like the Viram Agenda highlight the importance of controlling population growth to alleviate poverty.

To break the cycle of poverty and overpopulation, India must focus on education, skill development, and job creation. Empowering youth with practical skills and ensuring access to quality education can help lift families out of poverty and reduce population growth rates. Sustainable development goals must be prioritised to ensure that economic growth does not come at the expense of environmental health.

1. https://labour.gov.in/aatmanirbhar-bharat-rojgar-yojana-abry

Call to Action

Individuals

1. **Educate and Advocate:** Raise awareness about the critical importance of family planning and sustainable living practices. By educating communities on these topics, individuals can help promote responsible family planning and environmental stewardship, leading to healthier and more sustainable societies.
2. **Skill Development:** Encourage the youth to pursue skill-based education and training programs. This approach helps bridge the gap between job market requirements and workforce capabilities, ensuring that young people are equipped with the necessary skills to secure meaningful employment and contribute to economic growth.
3. **Sustainable Practices:** Adopt and promote sustainable consumption habits to minimize environmental impact. This includes reducing waste, conserving resources, and supporting eco-friendly products and practices. By making conscious choices, individuals can significantly reduce their carbon footprint and help protect the environment.

Government

1. **Implement Population welfare policies:** Implement policies that regulate family size and promote sustainable population growth. Such measures can help manage reproductive health and provide safe birth control measures, ensuring that resources are adequately distributed and that the quality of life for citizens is maintained.
2. **Enhance Skill Development Programs:** Expand and improve existing skill development initiatives to better prepare the workforce for modern job markets. This includes investing in vocational training, apprenticeships, and continuous learning opportunities to ensure that workers have the skills needed to thrive in a rapidly changing economy.
3. **Invest in Education:** Increase funding for educational resources, particularly in rural and underserved areas. By providing access to quality education, the government can help break the cycle of poverty and overpopulation, empowering individuals with the knowledge and skills needed to improve their socio-economic status and contribute to national development.

Conclusion

India's goal of becoming a developed nation by 2047 faces significant challenges, including overpopulation, poverty, and insufficient employment opportunities. Rapid rural-to-urban migration, driven by declining agricultural prospects and the lure of urban jobs, has led to overcrowded cities, strained infrastructure, and a growing informal economy. The lack of job creation and skill development has left the workforce ill-prepared for an evolving economy, perpetuating poverty and unemployment.

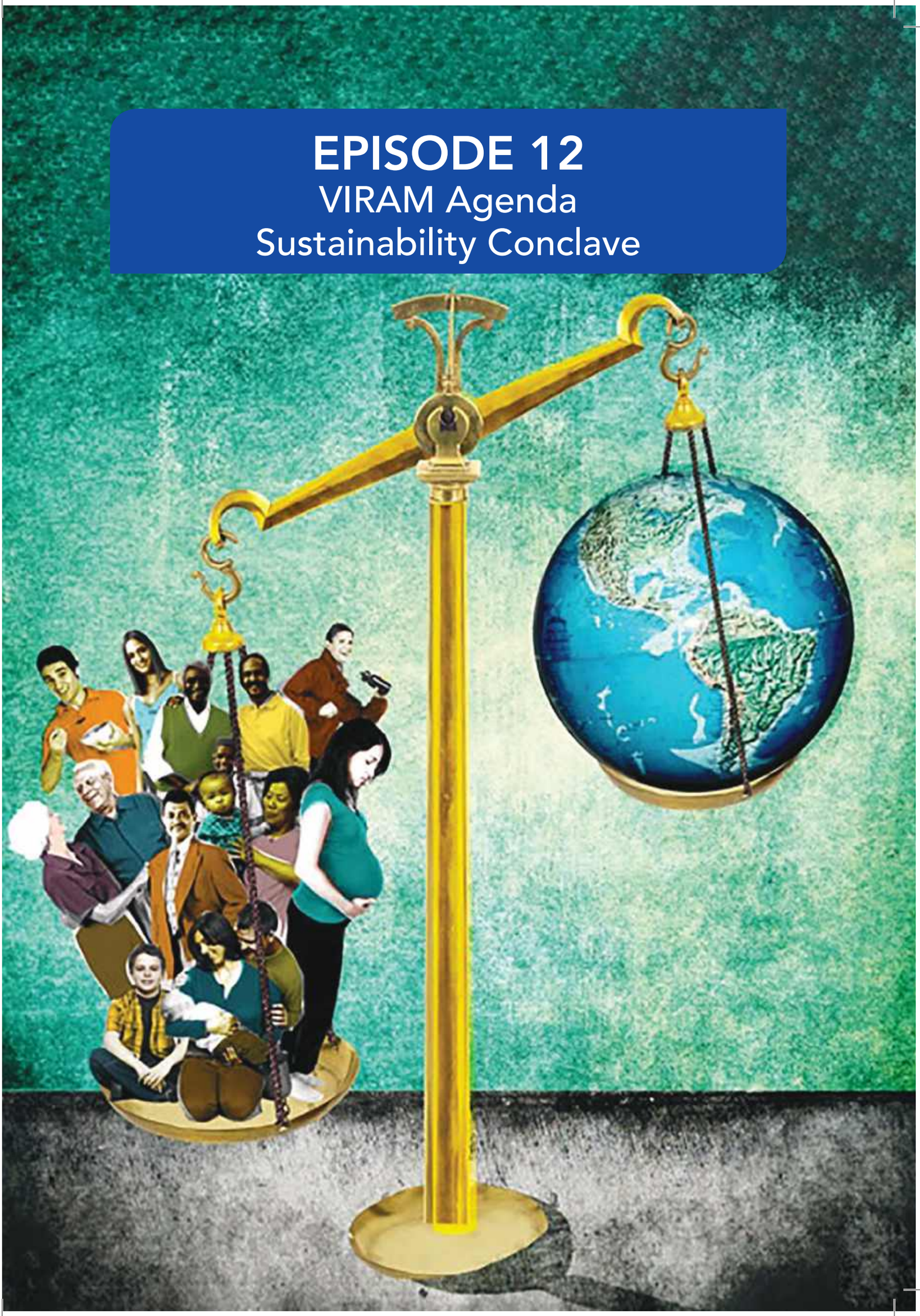
Addressing these issues requires a

comprehensive approach. Sustainable population control through education and awareness can align demographic growth with economic capacity. Investing in skill development and vocational training will equip the workforce with relevant skills, bridging the gap between job seekers and available jobs. Emphasizing quality education, especially for marginalized communities, can empower individuals to access better livelihoods and promote social mobility.

Achieving a prosperous and sustainable future depends on collective action. Policymakers must design inclusive economic reforms, while individuals should make informed choices about family planning and skill enhancement. With strategic interventions and sustained efforts, India can turn its demographic challenges into a demographic dividend, ensuring equitable growth and long-term development. The time to act is now, for a future that is economically robust, socially inclusive, and environmentally sustainable.

EPISODE 12

VIRAM Agenda
Sustainability Conclave



Episode 12 :
VIRAM Agenda Sustainability Conclave

Episode Synopsis

The episode showcased the culminating event of the year-long VIRAM Agenda Sustainability campaign, organised by the Mobius Foundation in collaboration with the India Today Group. The discussion explored the pressing issue of population stabilisation and its relationship with environmental sustainability. Distinguished experts and thought leaders discussed the urgent need to balance population growth with environmental sustainability. The discussions explored the complex intersections between demographic expansion, climate change, gender equality, resource consumption, and economic development.

Problem Statement

The global population has surpassed 8 billion, placing unprecedented strain on natural resources, ecosystems, and economies. While technological and policy advancements have contributed to sustainability efforts, unregulated population growth continues to accelerate environmental and socioeconomic challenges. If left unchecked, overpopulation could transform from a demographic dividend—where a large working-age population drives economic growth—into a demographic disaster, particularly in developing nations where infrastructure, employment, and public services are struggling to keep pace.

The rapid increase in global population amplifies environmental degradation in several ways. Further, in developing nations like India, where population growth remains high, existing social and economic structures struggle to accommodate the increasing demands of their citizens.

Given the severity of these issues, addressing overpopulation must be at the forefront of global sustainability efforts. As overpopulation continues to intensify environmental and economic challenges, urgent action is required to ensure a sustainable and equitable future. The choices made today regarding population control, resource management, and climate policies will determine whether the world moves toward a future of resilience and prosperity or crisis and collapse.

Speakers

Fireside Chat

Mr. Pradip Burman
Chairman, Mobius Foundation

Chief Guest:
Dr. Sudhanshu Trivedi
Member, Rajya Sabha

Session 1:
Panel Discussion – English

Balancing the Global Equation:
The Importance of population Stabilization

Host

Ms. Nabila Jamal
India Today Anchor

Panelists

Mr. Kiran Karnik
Padama Shri Awardee and Former President of National Association of Software and Service Companies (NASSCOM)

Mr. Praveen Garg
IAS (Rtd.), President - Mobius Foundation

Ms. Poonam Muttreja
Executive Director - Population Foundation of India

Mr. Arun Krishnamurthy
Founder, Environmentalist Foundation of India

L-R: Ms. Nabila Jamal, Mr. Pradip Burman, Dr. Sudhanshu Trivedi and Mr. Sayeed Ansari

Session 2:
Panel Discussion – Hindi

जनसंख्या स्थिरीकरण और पर्यावरण संसाधनों के बीच ताल– मेल की जरूरत

Host

Mr. Sayeed Ansari
Executive Editor, TVTN

Panelists

Mr. G. V. L. Narasimha Rao
Member, Rajya Sabhar

Dr. Ram Boojh
Advisor, Mobius Foundation

Mr. Siddharth Kak
Indian Documentary Filmmaker, Television Producer, and Presenter, (Best known as the Producer and Presenter of Surabhi)

Mr. Akash Ranison
Co-founder & Director - Greener Earth Foundation

Experts' Statements

Mr. Pradip Burman, Chairman of Mobius Foundation, emphasized that population sustainability goes beyond mere control; it ensures human development aligns with the environment's carrying capacity. This involves stabilizing population growth, promoting responsible resource consumption, and balancing economic progress with ecological preservation. Inspired by Rachel Carson's "Silent Spring" and Al Gore's "An Inconvenient Truth," Burman recognized the critical link between population growth and sustainability. These works highlighted the unintended consequences of human activity on ecosystems and the urgent need to address population dynamics in sustainability conversations.

The VIRAM initiative, inspired by these influences, aims to communicate the urgency of population sustainability through powerful audiovisual campaigns. Unlike traditional reports, VIRAM uses visual storytelling and data-driven narratives to highlight the direct link between population growth and environmental stress. It prioritizes population as the foundation of sustainable development, emphasizing that without addressing rapid population growth, other sustainability efforts risk being undermined. In developing nations like India, high population density exacerbates climate vulnerabilities, making it increasingly difficult to achieve sustainability goals. VIRAM calls for policymakers, educators, and citizens

to integrate population sustainability into climate strategies, ensuring human development respects planetary boundaries.

Dr. Sudhanshu Trivedi, Member of Rajya Sabha, emphasized that addressing overpopulation and its impact on climate change requires a multi-dimensional approach, starting with awareness and education. The Government of India recognizes that population control is not just a policy issue but also a social and cultural one. Educating communities, especially in rural areas, about family planning, reproductive health, and sustainable resource consumption is crucial for stabilizing population growth. However, with over 1.4 billion people, the challenge is to create a development model that accommodates the current population while mitigating its environmental footprint. This involves ensuring access to sustainable energy, efficient resource utilization, and environmentally responsible industrialization.

India's transition from coal-based energy to renewable sources, particularly solar power, has been a significant achievement in its climate action strategy. The country has rapidly increased its solar energy capacity, positioning itself as a leader in renewable energy. Additionally, the government launched a large-scale LED distribution program to reduce electricity consumption. Initially targeting 30-40% renewable energy by 2030, India achieved this goal ahead of schedule in 2022 and revised the target to 50% by 2030. This progress underscores India's commitment to a low-carbon economy. India's sustainability philosophy, which views nature as a nurturing mother, emphasizes harmony with the environment. The country's approach to population sustainability and climate change mitigation serves as a model for other developing nations. Moving forward, strengthening environmental awareness, expanding green technology investments, and ensuring equitable access to clean energy will be essential for continued progress. By respecting nature and adopting sustainable energy solutions, India can lead in integrating population dynamics with climate resilience strategies.

Mr. Kiran Karnik, Padma Shri Awardee and Former President of NASSCOM, highlighted the immense pressure on natural resources due to the global population of 8 billion and rising consumption patterns. Finite resources like water, arable land, and fossil fuels are being depleted unsustainably, exacerbating environmental degradation, biodiversity loss, and climate change. The current model of resource use is unsustainable and will lead to ecological and economic crises without intervention. However, there is a positive shift in demographic trends, with many countries reaching population stabilization. India is expected to stabilize at around 1.6 billion people by 2047-2050 before gradually decreasing to 1 billion by 2100. This natural population contraction offers a unique opportunity to implement sustainable policies for responsible resource management and climate resilience.

The challenge is managing resources efficiently during this transition. Rapid urbanization, industrial growth, and

infrastructure expansion will continue to strain ecosystems, increase carbon emissions, and generate environmental hazards. Developing sustainable consumption patterns that balance economic progress with environmental responsibility is urgent. Small and Medium Enterprises (SMEs) play a crucial role in addressing climate change and resource sustainability, but they often lack capital for green investments and awareness of sustainability practices. Collaborative efforts from governments, large corporations, and NGOs are needed to support SMEs. Empowering women through education, financial inclusion, and reproductive health services is also critical for sustainable population management. Decentralizing economic activity to smaller cities, towns, and rural areas can reduce urban stress and create opportunities for balanced regional development. Ultimately, sustainability is about long-term survival and economic resilience, and the choices made today will determine whether future generations inherit a thriving planet or a depleted one.

Mr. Praveen Garg, IAS (Rtd.), President - Mobius Foundation, highlighted that overpopulation has been a pressing concern in India since the 1950s, but despite early interventions, it has often been deprioritized. Today, the rapid and unchecked rise in population presents an alarming challenge, particularly in the context of climate change and resource sustainability. Poor quality of education, especially in rural areas, has led to widespread unemployability, exacerbating social tensions, food shortages, and environmental degradation. Overpopulation is intrinsically linked to climate change, as

L-R: Ms. Nabila Jamal, Mr. Kiran Karnik, Mr. Praveen Garg, Ms. Poonam Muttreja, and Mr. Arun Krishnamurthy

a rising population increases the demand for food, water, and energy, leading to deforestation, loss of biodiversity, and worsening pollution. The poorest segments of society, which often experience the highest birth rates, are the most vulnerable to climate disasters, remaining trapped in cycles of poverty.

Education, particularly for girls, is a critical intervention that can address both overpopulation and climate change. Higher levels of female education correlate with lower fertility rates, better economic opportunities, and improved family health. However, a deep divide exists between urban and rural education, with many rural areas lacking the resources needed for quality education. The Mobius Foundation's 100-school program for girls aims to provide underprivileged girls with access to education, enabling them to delay early marriage, pursue vocational training, and become self-sufficient. Governments and organizations must prioritize similar gender-focused educational reforms. The twin crises of overpopulation and climate change demand immediate action, and investing in education—especially for girls—can stabilize population growth, enhance economic productivity, and build resilience against climate change. Failure to address these challenges will result in deepening socio-economic divides, environmental collapse, and potential humanitarian crises.

Ms. Poonam Muttreja, Executive Director of the Population Foundation of India, emphasized that framing population growth as solely a woman's responsibility is both unjust and ineffective. Women, especially in remote and underserved areas, often lack access to adequate family planning services and face constraints due to social norms, lack of education, limited healthcare facilities, and financial dependence. A gender-equitable approach to population stabilization recognizes that family planning is a shared responsibility requiring men's active participation. This is crucial for achieving gender justice, as women must have full autonomy over their reproductive choices. Despite decades of family planning programs in India, millions of women still lack access to contraceptives, leading to unwanted fertility and high abortion rates. Organizations like the Mobius Foundation and the Population Foundation advocate for a human-centered approach that prioritizes education, healthcare access, and gender equality.

Addressing overpopulation, climate change, and gender justice requires a multi-stakeholder approach involving governments, private sector entities, and civil society. Currently, only the Mobius Foundation funds family planning initiatives under Corporate Social Responsibility (CSR), highlighting a gap in corporate involvement. A strong public-private partnership is needed to expand family planning and reproductive health services, improve contraceptive access and awareness, invest in gender-sensitive policies, and encourage men's participation in reproductive decisions. Overpopulation, climate change, and gender justice are deeply interconnected, and creating a sustainable future requires recognizing reproductive health as a shared responsibility, ensuring access to contraception and family

planning services, empowering women, encouraging men to share caregiving responsibilities, and promoting public-private collaboration for better resource allocation. By adopting a human rights-based approach to population stabilization, we can improve gender equality, enhance economic growth, and mitigate the effects of climate change.

Mr. Arun Krishnamurthy, Founder, Environmentalist Foundation of India, highlighted the severe environmental crisis facing India's cities due to surging urban populations. Landfills are becoming "garbage mountains," freshwater bodies are too polluted for consumption, and traditional celebrations in rivers and lakes are now marred by toxic froth. This situation underscores the unsustainability of our consumption patterns and the inadequacy of current solutions, which are creating new problems for the future. The crisis extends beyond waste management to encompass population growth, environmental degradation, and the increasing strain on natural resources. Unchecked urbanization and overconsumption are leading to poor air and water quality, rising climate-related diseases, and a cascade of negative impacts on every aspect of life.

The relationship between population growth and consumption patterns is deeply intertwined, with crowded cities driving up demand for housing, energy, water, and food. This results in over-extraction of natural resources, increased industrial pollution, and greater waste production, overwhelming existing landfill sites. Large infrastructure projects, mining expansions, and diluted environmental regulations, driven by the need to sustain a growing population, are sowing the seeds for future crises. The health effects of environmental degradation are evident in rising cases of vector-borne diseases, cancer, and respiratory illnesses. Wildlife populations are declining as habitats are destroyed, leading to increased man-animal conflicts. Historically, Indian society valued environmental harmony, but rapid urbanization and unchecked population growth have eroded these values. Addressing this crisis requires population literacy, sustainable consumption habits, and reconnecting people with nature. A shift from "desktop conservation" to field-based action, along with a science-based approach to sustainability, is essential to break the cycle of overpopulation and environmental degradation. If decisive action is not taken now, future generations will inherit a world defined by garbage, pollution, and resource scarcity.

Mr. G. V. L. Narasimha Rao, Member, Rajya Sabha, highlighted that India's government recognizes population explosion as a major challenge and is taking serious steps to address it. A high-powered committee has been established to explore solutions for population control and family planning, reflecting the government's strategic commitment. Despite various family planning measures since 1952, India continues to see steady population growth, which impacts the quality of life by hindering progress in healthcare, education, and resource distribution. The committee will assess potential incentives, disincentives, and policy measures, focusing on studying international experiences, examining

successful state models like Kerala and Tamil Nadu, engaging NGOs and developmental partners, and prioritizing public engagement, especially with women.

Population control and sustainability are not solely governmental responsibilities; all sectors of society, including industries and corporate entities, must contribute. The corporate sector, through Corporate Social Responsibility (CSR) initiatives, can support family planning programs, promote public awareness campaigns on population stabilization and sustainable consumption, and advocate for successful models by sharing data and insights with the government. Addressing population growth is critical for socio-economic progress, resource sustainability, and climate resilience. The government's high-powered committee marks a significant step forward, seeking evidence-based, practical, and culturally sensitive solutions. Integrating lessons from successful Indian states, international experiences, NGO interventions, and corporate contributions, along with active participation from women and communities, will be key to ensuring long-term success.

Dr. Ram Boojh, Advisor at Mobius Foundation, explained that "VIRAM: Agenda Sustainability" emphasizes the need to pause and reflect on population growth and its impact on sustainability. While stabilizing the population is crucial, the broader goal is to preserve economic and environmental resources for future generations. Population discussions must include sustainability, as increasing pressures threaten food security, natural resources, and ecological

L-R: Mr. Sayeed Ansari, Mr. G. V. L. Narasimha Rao, Dr. Ram Boojh, Mr. Siddharth Kak, and Mr. Akash Ranison

balance. Despite increased agricultural productivity, land for farming is limited, and resource distribution is unequal. As societies grow, the gap between the privileged and marginalized widens, making access to essential resources like food, water, and energy more inequitable. The book "Empty Planet" suggests that a declining population could lead to more equitable opportunities.

Climate change is linked to human activities, especially the excessive use of fossil fuels. Growing populations demand more energy, urbanization, and industrial expansion, contributing to greenhouse gas emissions and resulting in irregular rainfall, extreme weather events, frequent droughts, floods affecting agriculture, and soil degradation from excessive chemical fertilizer use. Historically, organic and traditional farming practices-maintained soil fertility and ecosystem balance, but modern practices driven by population pressure have caused environmental degradation. The three major global crises, climate change, biodiversity loss, and pollution are all connected to population growth and overconsumption. Addressing these issues requires collective action to raise awareness, implement policy changes, and encourage sustainable living practices. The solution lies in rebuilding our relationship with nature, an ethos rooted in Indian traditions. The VIRAM initiative aims to engage governments, NGOs, private organizations, and communities in finding sustainable solutions. By focusing on population literacy, responsible consumption, and sustainable resource management, we can address the root causes of environmental degradation and build a resilient future. The goal is a balanced coexistence of people and the planet, ensuring a sustainable tomorrow.

Mr. Siddharth Kak, Documentary Director, TV Producer, and Anchor, emphasized that education's role in tackling overpopulation and climate change goes beyond policy discussions—it must be integrated into all impactful programs and initiatives. While high-level policy decisions are crucial, their effectiveness is limited without community awareness, behavioral change, and grassroots participation. A high-powered committee has been formed to explore solutions, but policy alone cannot drive social transformation. Media is a powerful tool for shaping public perception, but lectures and awareness campaigns are not enough. Effective initiatives require collaboration across sectors—government bodies, NGOs, media professionals, educators, cultural leaders, and community influencers—to build a movement that inspires change. No single entity can address these complex challenges alone. True transformation requires a shared vision and unified effort across different sectors. India's strong sense of family and community values can foster sustainable practices and population responsibility. Discussions within families and communities can lead to a collective mindset shift, ensuring long-term, intergenerational change.

Communication strategies must be diverse and culturally relevant to impact both macro and micro levels. Mass media platforms like television and digital news channels are crucial for widespread

awareness, while traditional theatre and folk-art forms create a deeper, localized impact through emotional connection. Traditional storytelling formats resonate deeply with local audiences, and these art forms reach rural and semi-urban communities with limited outreach. Folk performances encourage dialogue and audience participation, enhancing message retention. Messages embedded in cultural and linguistic contexts are more relatable, making folk media effective for conveying complex social issues. Integrating folk media and localized communication methods into awareness campaigns can achieve wider community acceptance and engagement. Building on the VIRAM initiative, Mr. Kak suggested launching AARAMBH (The Beginning)—a campaign shifting focus from awareness to action. Addressing overpopulation and climate change requires institutional efforts and active contributions from individuals and communities. AARAMBH would focus on encouraging individual and community participation, leveraging traditional and modern communication, and creating community-led solutions. Expanding the VIRAM movement into AARAMBH can shift from discussions to direct engagement, empowering people at all levels to take ownership of sustainability and population responsibility. Collaborative efforts, community-driven initiatives, and culturally rooted communication strategies are essential for creating a sustainable, long-term impact.

Mr. Aakash Ranison, Co-founder and Director of Greener Earth Foundation, highlights Indore, Madhya Pradesh, as a prime example of effective environmental management in India. Indore's continuous efforts in cleanliness, waste management, and sustainability set it apart as a leading urban model. In contrast, Ladakh faces unique environmental challenges due to its reliance on rapidly depleting glaciers. Ladakh requires region-specific policies tailored to its high-altitude desert ecosystem and glacial dependence.

Globally, the United States, China, and India are the top greenhouse gas emitters. However, per capita emissions tell a different story: the U.S. leads with 20–21 metric tons per person, China follows, and India has a much lower footprint at 0.9 metric tons per person. Despite low per capita emissions, India's large population makes it a significant contributor to global emissions, illustrating the impact of overpopulation.

Overpopulation also leads to massive waste generation, stressing landfills, water bodies, and air quality. Effective waste management requires waste segregation at source, composting and organic waste treatment, reducing plastic consumption and improving recycling infrastructure. Indore's success in these areas serves as a model for other rapidly urbanizing cities.

Climate change mitigation demands diverse strategies, including public participation and behaviour change. India's low per capita emissions contrast with its overall impact due to population size. By learning from Indore, addressing Ladakh's vulnerabilities, and promoting sustainable lifestyles, India can lead in the global fight against climate change.

Outcome and Impact

Advocacy and Planning: Recognition that population sustainability must be addressed alongside climate action and resource conservation. Emphasis on sustainable urban planning, waste management, and balanced economic growth.

Importance of a long-term vision: Stronger advocacy for population literacy, family planning services, and gender-inclusive economic policies to achieve long-term sustainability goals. Increased awareness of intergenerational responsibilities—how today's actions affect future generations.

Overpopulation and Carbon Emissions: The discussions underscored the direct correlation between overpopulation and increased carbon emissions due to higher consumption rates. Efforts were directed towards promoting sustainable consumption practices and reducing individual carbon footprints through public awareness campaigns and policy changes.

Sustainable Economic Policies: The importance of economic policies that foster job creation without depleting natural resources was emphasized. Strategies included promoting green jobs and industries that prioritize sustainability, as well as incentivizing businesses to adopt eco-friendly practices. The need for policies that address education, employment, and environmental sustainability together was emphasized. Comprehensive strategies were developed to integrate these areas, ensuring a holistic approach to sustainable development.

Multi-Stakeholder Approach: The discussions highlighted the importance of a multi-stakeholder approach, leveraging technology, education, and policy interventions to promote sustainable population levels. Collaborative efforts between government, private sector, and civil society were encouraged to address these complex issues effectively.

Call to Action

Individuals

- **Adopt sustainable consumption habits:** Reduce waste, limit resource use, and promote eco-friendly choices.
- **Support gender equality and family planning:** Advocate for equal reproductive rights and educational access for women.
- **Educate and engage communities:** Spread awareness about population sustainability and its impact on the environment.

Government

- **Strengthen education and skill development programs:** Ensure that the growing population is equipped with employable skills.
- **Integrate population policies with climate action:** Address family planning, resource conservation, and urban planning together.

- **Enforce stricter environmental regulations:** Prevent deforestation, industrial pollution, and unsustainable land use.

Conclusion

The discussions on the interconnected issues of population growth, climate change, economic development, gender equality, and resource management have highlighted several critical points. Overpopulation and unchecked urbanisation are major contributors to environmental degradation and increased carbon emissions. Addressing these issues requires promoting sustainable consumption practices and implementing stricter regulations on industrial activities.

Economic and social implications, such as rising unemployment due to low education levels, necessitate improved educational systems and vocational training programs. Sustainable economic policies that create jobs without overexploiting resources are essential for long-term development. Gender equality and population control remain significant challenges, with family planning often seen as a woman's burden. Efforts to promote shared responsibility and improve access to reproductive health services and education for women are crucial.

L-R: Ms. Nabila Jamal, Mr. Kiran Karnik, Mr. Praveen Garg, Ms. Poonam Muttreja, Mr. Pradip Burman, and Mr. Arun Krishnamurthy

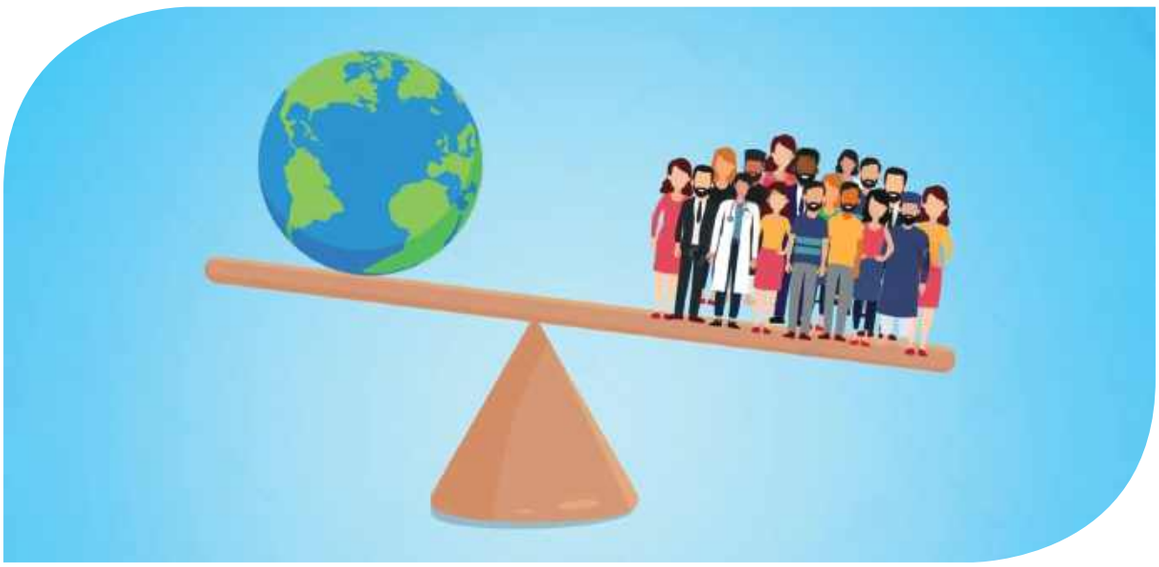
Resource management and consumption patterns play a vital role in environmental stability. Promoting water conservation, reducing plastic use, and evaluating the long-term impacts of new technologies are necessary steps towards sustainability. The reliance on fossil fuels and unsustainable resource exploitation must be addressed through the promotion of renewable energy and sustainable practices.

Policy gaps and the role of governance are critical in achieving sustainable development. While progress has been made in renewable energy, stronger population control measures and integrated policies that address education, employment, and environmental sustainability are needed. A multi-stakeholder approach, leveraging technology, education, and policy interventions, is essential for promoting sustainable population levels and addressing these complex issues effectively.

Overall, a comprehensive and collaborative approach is required to tackle the multifaceted challenges posed by population growth and climate change, ensuring a sustainable and equitable future for all.

The VIRAM Agenda Sustainability campaign serves as a crucial step toward fostering a collective mindset shift—one that recognises the urgent need to manage population growth responsibly. The campaign emphasises that sustainability is not just about reducing emissions or conserving resources, but also about redefining societal values toward a future where people and the planet coexist harmoniously.

To ensure a liveable future for all, global efforts must move beyond policy discussions and translate into tangible, community-driven action. Only through integrated strategies, inclusive development, and shared responsibility can we effectively combat the climate crisis, alleviate resource pressures, and build a world where future generations can thrive.

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CONCLUSION

The **VIRAM – Agenda Sustainability** campaign, a year-long initiative by the **Mobius Foundation** in collaboration with the **India Today Group**, concluded with a strong message: **population stabilization is fundamental to India's sustainable future**. Through an engaging series of television panel discussions, the campaign brought together policymakers, environmentalists, economists, healthcare experts, and educators to deliberate on the cascading impact of overpopulation on climate change, pollution, human health, biodiversity loss, and the unsustainable consumption of natural resources.

As India moves toward its centennial of independence in 2047, the insights from VIRAM emphasized that sustainable development cannot be achieved in silos. Population growth intersects deeply with environmental degradation, resource scarcity, and socio-economic inequalities. Stabilizing population growth, therefore, must be integrated into all development policies as a central pillar of national planning.

The campaign highlighted that meaningful change is only possible through **inclusive policies, widespread awareness, collaborative governance**, and a clear roadmap for implementation. Moving forward, the momentum generated by VIRAM will continue through policy dialogues, community outreach, and media advocacy, ensuring that the conversation around sustainability and population remains a national priority.

10 Key Recommendations from VIRAM – Agenda Sustainability

1. Implement Comprehensive Family Planning Programs

Expand access to affordable and voluntary family planning services, particularly in underserved rural and urban areas, to promote reproductive health and population stabilization.

2. Integrate Population and Sustainability Education

Introduce population education and sustainability awareness in school curricula to build informed and responsible future citizens.

3. Empower Women and Girls

Prioritize gender equity through improved access to education, healthcare, and economic opportunities, enabling women to make informed reproductive choices.

4. Strengthen Rural and Migrant Skill Development

Establish targeted vocational training

and livelihood programs to reduce economic pressures that drive unplanned urban migration and overburden city infrastructure.

5. Promote Green Urban Development

Encourage sustainable urban planning that includes renewable energy use, efficient public transport, waste management, and green spaces to reduce the environmental footprint.

6. Accelerate Renewable Energy Adoption

Scale up the use of solar, wind, and other renewable energy sources to reduce dependency on fossil fuels and lower greenhouse gas emissions.

7. Modernize Water Management Systems

Implement smart water management solutions, such as rainwater harvesting, wastewater treatment, and digital water monitoring, to address water scarcity and pollution.

8. Encourage Sustainable Consumption Patterns

Launch nationwide campaigns to promote conscious consumption, reduce waste, and support eco-friendly lifestyles through incentives and policy support.

9. Anticipate the Future of Work

Develop strategic reskilling and upskilling programs to prepare the workforce for challenges arising from automation, demographic shifts, and economic transitions.

10. Foster Multi-Stakeholder Collaboration

Strengthen partnerships among governments, civil society, private sector, and international bodies to align population and sustainability goals with actionable outcomes.

ANNEXURE A

I. BARC India Analytics

BARC India 1st - 2nd Qtrs. Analytics

Targets	Region	Channel	Description	Date	Start Time	End Time	Ev. Type	Level	Dur (secs.)	Dur (mins.)	AMA 000's	Cume Rch '000	ATS (Viewer)
Universe	India	Aaj Tak	Viram Agenda Sustainability	18-12-22	14:27:04	14:50:42	Programme	Level 1	1418	23.6	115.2	953	00:02:51
Universe	India	Aaj Tak	Viram Agenda Sustainability	26-02-23	14:25:41	14:43:46	Programme	Level 1	1085	18.1	178.2	1,207	00:02:40
Universe	India	Aaj Tak	Viram Agenda Sustainability	26-03-23	14:29:46	14:51:01	Programme	Level 1	1275	21.3	192.8	1,317	00:03:07
Universe	India	Aaj Tak	Viram Agenda Sustainability	30-04-23	14:29:09	14:51:14	Programme	Level 1	1325	22.1	262.7	1,668	00:03:29
Universe	India	Aaj Tak HD	Viram Agenda Sustainability	18-12-23	14:27:04	14:51:16	Programme	Level 1	1452	24.2	10.6	97	00:02:38
Universe	India	Aaj Tak HD	Viram Agenda Sustainability	26-02-23	14:25:59	14:44:04	Programme	Level 1	1085	18.1	12.4	91	00:02:29
Universe	India	India Today Television	Viram Agenda Sustainability	17-12-22	19:22:39	19:47:33	Programme	Level 1	1494	24.9	1.5	14	00:02:34
Universe	India	India Today Television	Viram Agenda Sustainability	25-02-23	19:30:55	19:47:59	Programme	Level 1	1024	17.1	7.5	51	00:02:31
Universe	India	India Today Television	Viram Agenda Sustainability	25-03-23	19:35:09	19:53:23	Programme	Level 1	1094	18.2	1.1	21	00:00:59
Universe	India	India Today Television	Viram Agenda Sustainability	29-04-23	19:28:49	19:48:08	Programme	Level 1	1159	19.3	3.0	22	00:02:38
Universe	**India**	**TOTAL**									**80.1**	**4,543**	**00:02:58**

1. Average viewership time (AVT) on AajTak and India Today is 2.5 min per episode.
2. Television viewership in thousand (or AMA/ TVT) for India Today is 3.2% and for AajTak is 18.72%

BARC India 1st - 2nd - 3rd Qtrs. Analytics

AajTak Universe – 18.60 crore timeslot between 1-3 PM

India Today Universe – 53 lakh timeslot between 6:30- 7:30 PM

Programme

Period	Channel	Date	Ev. Type	Dur. Mins.	AMA 000's (Avg.)	Cum. Rch. '000	Ats (Viewer)
[2022/11/15] … [2023/11/30]	Aaj Tak	18-12-2022	Programme	23.6	115.2	953.1	00:02:51
[2022/11/15] … [2023/11/30]	Aaj Tak	26-02-2023	Programme	18.1	178.2	1,207.2	00:02:40
[2022/11/15] … [2023/11/30]	Aaj Tak	26-03-2023	Programme	21.3	192.8	1,317.3	00:03:07
[2022/11/15] … [2023/11/30]	Aaj Tak	30-04-2023	Programme	22.1	262.7	1,668.2	00:03:29
[2022/11/15] … [2023/11/30]	Aaj Tak	21-05-2023	Programme	22.2	174.8	1,312.7	00:02:57
[2022/11/15] … [2023/11/30]	Aaj Tak	01-10-2023	Programme	18.2	167.7	1,413.3	00:02:10
[2022/11/15] … [2023/11/30]	Aaj Tak HD	18-12-2022	Programme	24.2	10.6	97.2	00:02:38
[2022/11/15] … [2023/11/30]	Aaj Tak HD	26-02-2023	Programme	18.1	12.4	90.6	00:02:29
[2022/11/15] … [2023/11/30]	India Today Television	17-12-2022	Programme	24.9	1.5	14.2	00:02:34
[2022/11/15] … [2023/11/30]	India Today Television	25-02-2023	Programme	17.1	7.5	50.6	00:02:31
[2022/11/15] … [2023/11/30]]	India Today Television	25-03-2023	Programme	18.2	1.1	21.1	00:00:59
[2022/11/15] … [2023/11/30]	India Today Television	29-04-2023	Programme	19.3	3.0	21.8	00:02:38
[2022/11/15] … [2023/11/30]	India Today Television	20-05-2023	Programme	18.8	2.3	14.5	00:03:00
[2022/11/15] … [2023/11/30]]	India Today Television	30-09-2023	Programme	24.6	1.2	11.0	00:02:38
[2022/11/15] … [2023/11/30]	India Today Television	04-11-2023	Programme	2.5	2.5	6.1	00:01:01
[2022/11/15] … [2023/11/30]	India Today Television	04-11-2023	Programme	2.6	1.5	5.6	00:00:40
[2022/11/15] … [2023/11/30]	**(TOTAL)**			295.6	79.7	6,292.2	00:02:33

Promos

Period	Channel	Ev. Type	Cume Rch ('000)
[2022/11/15] … [2023/11/30]	Aaj Tak	Promo	9,551
[2022/11/15] … [2023/11/30]	Aaj Tak	Promo	4,489
[2022/11/15] … [2023/11/30]	India Today Television	Promo	79
[2022/11/15] … [2023/11/30]	India Today Television	Promo	34
[2022/11/15] … [2023/11/30]	India Today Television	Promo	38
[2022/11/15] … [2023/11/30]	India Today Television	Promo	0
[2022/11/15] … [2023/11/30]	**[TOTAL]**		**12,984**

Commercial

Period	Channel	Brand	Cume Rch ('000)
[2022/11/15] ... [2023/11/30]	Aaj Tak	VIRAM AGENDA SUSTAINABILITY	451.3
[2022/11/15] ... [2023/11/30]	Aaj Tak	VIRAM AGENDA SUSTAINABILITY	962.4
[2022/11/15] ... [2023/11/30]	Aaj Tak	VIRAM AGENDA SUSTAINABILITY	6,592.6
[2022/11/15] ... [2023/11/30]	Aaj Tak	VIRAM AGENDA SUSTAINABILITY	3,151.4
[2022/11/15] ... [2023/11/30]	Aaj Tak	VIRAM AGENDA SUSTAINABILITY	767.4
[2022/11/15] ... [2023/11/30]	Aaj Tak	VIRAM AGENDA SUSTAINABILITY	304.4
[2022/11/15] ... [2023/11/30]	Aaj Tak	VIRAM AGENDA SUSTAINABILITY	445.7
[2022/11/15] ... [2023/11/30]	Aaj Tak	VIRAM AGENDA SUSTAINABILITY	877.6
[2022/11/15] ... [2023/11/30]	Aaj Tak	VIRAM AGENDA SUSTAINABILITY	1,223.4
[2022/11/15] ... [2023/11/30]	Aaj Tak	VIRAM AGENDA SUSTAINABILITY	2,287.6
[2022/11/15] ... [2023/11/30]	Aaj Tak	VIRAM AGENDA SUSTAINABILITY	199.4
[2022/11/15] ... [2023/11/30]	Aaj Tak	VIRAM AGENDA SUSTAINABILITY	150.2
[2022/11/15] ... [2023/11/30]	India Today Television	VIRAM AGENDA SUSTAINABILITY	1.8
[2022/11/15] ... [2023/11/30]	India Today Television	VIRAM AGENDA SUSTAINABILITY	3.9
[2022/11/15] ... [2023/11/30]	India Today Television	VIRAM AGENDA SUSTAINABILITY	140.4
[2022/11/15] ... [2023/11/30]	India Today Television	VIRAM AGENDA SUSTAINABILITY	90.2
[2022/11/15] ... [2023/11/30]	India Today Television	VIRAM AGENDA SUSTAINABILITY	0.0
[2022/11/15] ... [2023/11/30]	India Today Television	VIRAM AGENDA SUSTAINABILITY	20.9
[2022/11/15] ... [2023/11/30]	India Today Television	VIRAM AGENDA SUSTAINABILITY	13.8
[2022/11/15] ... [2023/11/30]	India Today Television	VIRAM AGENDA SUSTAINABILITY	50.9
[2022/11/15] ... [2023/11/30]	India Today Television	VIRAM AGENDA SUSTAINABILITY	7.3
[2022/11/15] ... [2023/11/30]	India Today Television	VIRAM AGENDA SUSTAINABILITY	2.0
[2022/11/15] ... [2023/11/30]	India Today Television	VIRAM AGENDA SUSTAINABILITY	19.4
[2022/11/15] ... [2023/11/30]	India Today Television	VIRAM AGENDA SUSTAINABILITY	1.8
2022/11/15] ... [2023/11/30]	India Today Television	VIRAM AGENDA SUSTAINABILITY	27.8
[2022/11/15] ... [2023/11/30]	**[TOTAL]**		**14,305.8**

1. Average viewership time (AVT) on AajTak and India Today is 2.5 minutes per episode, thus short format episodes are garnering us maximum watch time.
2. Television viewership for India Today is 12.84% from 3.2 % and for AajTak is 21.22% from 18.7%. There is an increase in viewership due to 3rd qtr. performance because of change of content format.

II. Air Time Log

CONCEPT PROMO AT	CONCEPT PROMO ITTV	Launch Episode Promo AT	Launch Episode Promo AT ITTV	LaunchVignette AT	LaunchVignette ITTV	Ep 2 Promo AT	EP 2 Promo ITTV	Ep 2 Vignette AT	Ep 2 Vignette ITTV
22-11-2022 12:54	22-11-2022 23:28	17-12-2022 17:41	17-12-2022 07:11	21-12-2022 14:37	21-12-2022 08:09	24-02-2023 12:46	24-02-2023 08:40	28-02-2023 13:20	28-02-2023 10:27
22-11-2022 13:21	22-11-2022 13:57	17-12-2022 17:50	17-12-2022 09:29	21-12-2022 15:57	21-12-2022 15:28	24-02-2023 15:57	24-02-2023 10:38	28-02-2023 15:55	28-02-2023 12:08
22-11-2022 14:30	22-11-2022 14:27	17-12-2022 07:28	17-12-2022 11:28		21-12-2022 18:09	24-02-2023 23:20	24-02-2023 12:27		28-02-2023 14:10
22-11-2022 15:46	22-11-2022 14:57	17-12-2022 11:56	17-12-2022 12:38			25-02-2023 07:46	24-02-2023 23:40		
22-11-2022 16:55	22-11-2022 15:27	17-12-2022 08:28	17-12-2022 13:31			25-02-2023 09:49	24-02-2023 15:27		
23-11-2022 07:48	22-11-2022 15:38	17-12-2022 14:27	17-12-2022 14:10			25-02-2023 10:48	24-02-2023 16:08		
23-11-2022 11:47	22-11-2022 16:27	18-12-2022 07:47	17-12-2022 15:12			25-02-2023 12:37	24-02-2023 23:08		
23-11-2022 12:47	22-11-2022 16:38	18-12-2022 08:29	17-12-2022 16:09			25-02-2023 14:55	25-02-2023 07:11		
23-11-2022 13:46	22-11-2022 17:09	18-12-2022 10:29	17-12-2022 17:27			25-02-2023 15:56	25-02-2023 09:58		
23-11-2022 14:46	22-11-2022 17:58	18-12-2022 13:21	17-12-2022 18:11			25-02-2023 16:46	25-02-2023 12:11		
23-11-2022 15:28	22-11-2022 18:28					26-02-2023 07:49	25-02-2023 14:27		
23-11-2022 13:28	22-11-2022 18:58					26-02-2023 08:48	25-02-2023 16:27		
23-11-2022 14:29	22-11-2022 19:29					26-02-2023 12:46	25-02-2023 08:11		
23-11-2022 15:20	22-11-2022 19:39					26-02-2023 13:37			
23-11-2022 10:47	22-11-2022 22:11								
	23-11-2022 12:10								
	23-11-2022 07:57								
	23-11-2022 08:27								
	23-11-2022 08:38								
	23-11-2022 09:08								
	23-11-2022 09:57								
	23-11-2022 10:27								
	23-11-2022 11:29								
	23-11-2022 11:38								
	23-11-2022 12:27								
	23-11-2022 14:10								
	23-11-2022 13:57								
	23-11-2022 14:27								
	23-11-2022 14:40								

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Ep 3 Promo AT	Ep 3 Promo ITTV	Ep 3 Vignette AT	Ep 3 Vignette ITTV	Ep 4 Promo AT	Ep 4 Promo ITTV	Ep 4 Vignette AT	Ep 4 Vignette ITTV	Ep5 Promo AT	Ep5 Promo ITTV	Ep 5 Vignette AT	Ep 5 Vignette ITTV
24-03-2023 23:47	24-03-2023 12:10	05-04-2023 09:47	05-Apr-23 19:24:32	29-Apr-23 07:25:35	29-Apr-23 07:12:37	09-May-23 13:19:53		19-May-23 11:48:54		26-May-23 07:56:34	26-May-23 07:27:52
24-03-2023 13:47	24-03-2023 14:09	05-04-2023 14:54	05-Apr-23 15:19:28	29-Apr-23 09:45:26	29-Apr-23 08:55:59	09-May-23 15:54:34	10-May-23 09:40:50	19-May-23 14:47:45	19-May-23 08:33:40	26-May-23 10:55:39	26-May-23 09:30:16
24-03-2023 09:46	24-03-2023 16:40		05-Apr-23 09:53:35	29-Apr-23 10:48:37	29-Apr-23 09:20:48	10-May-23 11:27:51	10-May-23 15:26:31	19-May-23 16:51:18	19-May-23 10:29:29	26-May-23 13:55:42	26-May-23 11:54:41
25-03-2023 14:20	24-03-2023 21:01			29-Apr-23 11:51:20	29-Apr-23 10:25:42	10-May-23 15:55:57	10-May-23 17:23:03	20-May-23 08:25:56	19-May-23 14:23:46	26-May-23 15:55:29	26-May-23 12:50:15
25-03-2023 12:48	24-03-2023 23:39			29-Apr-23 12:51:02	29-Apr-23 14:38:16	10-May-23 13:49:39	10-May-23 23:54:15	20-May-23 11:21:08	19-May-23 18:45:15	26-May-23 17:53:24	26-May-23 14:21:15
25-03-2023 13:45	25-03-2023 16:08			29-Apr-23 15:52:27	29-Apr-23 12:27:01	10-May-23 16:51:47	10-May-23 13:56:40	20-May-23 15:51:54	19-May-23 12:48:16	26-May-23 22:52:24	26-May-23 16:56:00
25-03-2023 14:59	25-03-2023 09:29			29-Apr-23 23:52:45	29-Apr-23 15:40:06	10-May-23 14:57:08	10-May-23 23:49:13				26-May-23 18:29:21
25-03-2023 15:52	25-03-2023 11:28			29-Apr-23 23:26:10	29-Apr-23 14:22:53	10-May-23 08:48:18	11-May-23 08:34:51	21-May-23 08:45:56	20-May-23 08:54:35		26-May-23 19:23:13
25-03-2023 16:52	25-03-2023 13:13				29-Apr-23 17:53:40	10-May-23 23:24:39	11-May-23 15:24:48	21-May-23 09:44:26	20-May-23 14:29:09		
25-03-2023 10:46	25-03-2023 15:13			30-Apr-23 07:22:10	29-Apr-23 16:52:21		11-May-23 16:52:27	21-May-23 12:47:54	20-May-23 15:38:32		
25-03-2023 07:52	25-03-2023 17:12			30-Apr-23 08:45:34	29-Apr-23 17:25:43				20-May-23 17:30:27		
26-03-2023 07:49	25-03-2023 08:29			30-Apr-23 12:20:28	29-Apr-23 18:19:14		11-May-23 13:50:48				
26-03-2023 10:47	25-03-2023 10:09			30-Apr-23 13:44:51	29-Apr-23 07:57:38		11-May-23 23:23:15				
26-03-2023 13:56	25-03-2023 12:15			30-Apr-23 09:51:23	29-Apr-23 09:57:29						
26-03-2023 12:37	25-03-2023 14:14				29-Apr-23 15:55:39						

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Ep 6 Short episode AT	Ep 6 Short episode ITTV	Ep 7 ICSE AT Vignette 120 sec	Ep 7 AT Promo	Ep 7 ICSE ITTV Vignette 120 sec	Ep 7 ITTV Promo	Ep 8 Short episode AT	Ep 8 Short episode ITTV	Ep 9 Short episode AT	Ep 9 Short episode ITTV
27-Aug-23 14:56:04	25-Aug-23 18:30:40	22-Sep-23 14:47:54	30-Sep-23 11:48:01	22-Sep-23 14:55:52	29-Sep-23 11:34:06	22-Oct-23 14:56:39	21-Oct-23 19:46:34	19-Nov-23 14:25:31	18-Nov-23 18:27:16
28-Aug-23 15:54:15	26-Aug-23 17:24:14	22-Sep-23 16:45:09	30-Sep-23 13:20:38	22-Sep-23 16:35:07	29-Sep-23 12:46:29	22-Oct-23 15:49:00	21-Oct-23 20:39:54		18-Nov-23 19:26:56
10-Sep-23 14:54:00	27-Aug-23 19:40:13		30-Sep-23 12:57:21	22-Sep-23 16:35:07	29-Sep-23 13:22:24	05-Nov-23 13:51:12	22-Oct-23 20:31:05	26-Nov-23 13:27:35	19-Nov-23 18:23:16
11-Sep-23 15:21:00	09-Sep-23 20:54:20		30-Sep-23 14:25:14		29-Sep-23 14:24:39	05-Nov-23 15:25:01	04-Nov-23 18:23:55	26-Nov-23 14:20:32	25-Nov-23 18:23:30
	15-Sep-23 19:49:09		30-Sep-23 15:27:31		29-Sep-23 15:32:53		04-Nov-23 19:27:05		25-Nov-23 19:37:29
	15-Sep-23 20:49:42		30-Sep-23 16:45:48		29-Sep-23 16:45:44		05-Nov-23 18:25:45		26-11-2023 18:29:43
			30-Sep-23 17:47:36		29-Sep-23 17:34:14				
			30-Sep-23 15:53:00		29-Sep-23 18:51:51				
			30-Sep-23 11:20:01		29-Sep-23 11:55:44				
			30-Sep-23 11:55:15		29-Sep-23 19:17:18				
			01-Oct-23 11:20:57		30-Sep-23 15:57:24				
			01-Oct-23 13:29:33		30-Sep-23 12:39:31				
			01-Oct-23 13:54:53		30-Sep-23 13:56:24				
			01-Oct-23 12:51:59		30-Sep-23 14:21:45				
			01-Oct-23 11:56:57		30-Sep-23 16:22:07				
			01-Oct-23 13:25:03		30-Sep-23 17:27:26				
			01-Oct-23 12:48:14		30-Sep-23 18:31:20				
			01-Oct-23 12:56:14						
			01-Oct-23 11:49:52						
			01-Oct-23 13:50:13						

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Ep 10 Short episode AT	Ep 10 Short episode ITTV	Ep 11 Short episode AT	Ep 11 Short episode ITTV	Ep 12 CONCEPT PROMO AT	CONCEPT PROMO VIRAM ITTV 30 SEC	EP 12 VIGNETTE 1 AT	MOBIUS ITTV VIG 1 60 SEC	EP 12 VIGNETTE 2 AT	MOBIUS ITTV VIG 2 60 SEC
14-01-2024 14:55	13-Jan-24 18:47:03	28-01-2024 14:48	27-01-2024 18:51	20-Apr-24 11:21:20	20-Apr-24 08:26:42	20-Apr-24 13:37:40	20-Apr-24 07:30:12	20-Apr-24 10:28:35	20-Apr-24 12:56:33
14-01-2024 15:55	13-Jan-24 19:26:58	28-01-2024 15:50	27-01-2024 19:53	20-Apr-24 08:32:20	20-Apr-24 10:41:24	20-Apr-24 07:47:50	20-Apr-24 09:24:17	20-Apr-24 23:46:00	20-Apr-24 15:22:24
21-01-2024 15:19	14-Jan-24 18:41:53	17-03-2024 14:55	28-01-2024 19:03	20-Apr-24 16:57:25	20-Apr-24 13:24:24	20-Apr-24 23:27:15	21-Apr-24 11:26:48	21-Apr-24 14:46:35	20-Apr-24 16:31:11
25-01-2024 14:49	20-Jan-24 18:20:50	17-03-2024 15:54	16-Mar-24 18:43:18	20-Apr-24 18:41:20	20-Apr-24 20:22:48	21-Apr-24 07:46:15	21-Apr-24 10:52:03		21-Apr-24 15:26:24
	20-Jan-24 19:21:25		17-Mar-24 18:19:22	20-Apr-24 19:47:25	20-Apr-24 22:26:17	24-Apr-24 16:47:20	21-Apr-24 08:26:27		
	21-Jan-24 18:25:25		19-Mar-24 14:57:46	21-Apr-24 08:27:45	21-Apr-24 09:53:21				
				21-Apr-24 09:56:25	21-Apr-24 07:24:15				
				21-Apr-24 16:55:25	21-Apr-24 12:55:18				
				21-Apr-24 14:27:40	21-Apr-24 17:28:01				
				21-Apr-24 23:10:00	21-Apr-24 22:19:36				

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EP 12 VIGNETTE 3 AT	MOBIUS ITTV VIG 3 60 SEC	MOBIUS CONCEPT PROMO AT	VIRAM ITTV PROMO 30 SEC	Mr. Burman Vignette on Population Day	SO SORRY ITTV	SO SORRY AT
20-Apr-24 14:47:25	20-Apr-24 18:42:11	13-Apr-24 12:37:10	13-Apr-24 14:54:47	11-Jul-23 08:54:14	11-Jul-23 13:27:03	11-Jul-23 15:18:39
20-Apr-24 11:48:10	20-Apr-24 21:35:27	13-Apr-24 13:45:00	13-Apr-24 15:18:55	11-Jul-23 12:21:38	11-Jul-23 14:58:36	11-Jul-23 15:54:44
20-Apr-24 23:54:20	21-Apr-24 19:21:16	13-Apr-24 14:47:40	13-Apr-24 15:55:26	11-Jul-23 15:55:40	11-Jul-23 15:25:31	11-Jul-23 16:22:48
21-Apr-24 15:46:00		13-Apr-24 16:55:10	13-Apr-24 16:28:02	11-Jul-23 17:42:19	11-Jul-23 16:22:53	11-Jul-23 16:51:21
21-Apr-24 23:36:00		13-Apr-24 23:21:55	13-Apr-24 16:50:05	11-Jul-23 22:57:44	11-Jul-23 23:26:43	11-Jul-23 14:55:38
		13-Apr-24 19:46:25	13-Apr-24 17:54:37	12-Jul-23 08:54:42	11-Jul-23 18:48:19	11-Jul-23 23:24:36
		13-Apr-24 23:45:45	13-Apr-24 19:56:55	12-Jul-23 10:21:38	11-Jul-23 14:25:16	11-Jul-23 23:55:09
		14-Apr-24 12:37:00	13-Apr-24 12:52:58	12-Jul-23 12:56:35	12-Jul-23 07:21:11	12-Jul-23 11:26:39
		14-Apr-24 11:19:55	13-Apr-24 13:20:47	12-Jul-23 15:48:11	12-Jul-23 09:35:30	12-Jul-23 12:25:05
		14-Apr-24 07:50:05	13-Apr-24 18:24:37	12-Jul-23 14:50:58	12-Jul-23 11:25:46	12-Jul-23 13:21:38
			13-Apr-24 18:55:03		12-Jul-23 13:52:22	12-Jul-23 14:56:25
					12-Jul-23 18:53:15	12-Jul-23 16:22:04
					12-Jul-23 23:26:35	12-Jul-23 23:15:47
					12-Jul-23 20:56:04	12-Jul-23 23:55:28
					25-Aug-23 15:27:14	26-Aug-23 11:56:31
					25-Aug-23 18:30:40	27-Aug-23 07:52:04
					26-Aug-23 17:24:14	27-Aug-23 10:57:01
					26-Aug-23 18:27:15	30-Aug-23 08:29:10
					26-Aug-23 11:27:33	09-Sep-23 14:54:59
					26-Aug-23 15:24:08	10-Sep-23 15:25:47
					08-Sep-23 16:40:27	10-Sep-23 16:20:26
					09-Sep-23 17:29:24	13-Sep-23 15:49:21
					13-Sep-23 14:23:07	22-Oct-23 14:24:29
					13-Sep-23 16:27:45	22-Oct-23 15:21:51
					21-Oct-23 14:34:28	05-Nov-23 23:20:01
					21-Oct-23 16:27:06	05-Nov-23 12:28:09
					21-Oct-23 18:24:34	05-Nov-23 17:50:35
					22-Oct-23 15:42:32	19-Nov-23 09:52:28
					22-Oct-23 18:25:50	19-Nov-23 11:56:15
					04-Nov-23 12:38:17	26-Nov-23 17:49:24
					04-Nov-23 13:25:02	26-Nov-23 23:54:57
					04-Nov-23 15:27:34	14-01-2024 14:26
					05-Nov-23 16:29:43	14-01-2024 16:26
					05-Nov-23 21:27:25	14-01-2024 16:44
					18-Nov-23 09:15:56	21-01-2024 14:20
					18-Nov-23 12:23:16	21-01-2024 16:26
					18-Nov-23 15:19:03	28-01-2024 14:18
					19-Nov-23 08:34:08	02-02-2024 14:51
					19-Nov-23 14:25:33	17-03-2024 14:26
					25-Nov-23 10:45:36	17-03-2024 15:25
					25-Nov-23 22:23:38	17-03-2024 16:40
					26-Nov-23 12:53:21	
					26-Nov-23 15:52:09	
					26-Nov-23 22:38:24	
					13-Jan-24 11:32:52	
					13-Jan-24 21:35:39	
					14-Jan-24 08:28:43	
					14-Jan-24 13:54:21	
					14-Jan-24 16:25:06	
					20-Jan-24 08:22:55	
					20-Jan-24 20:12:17	
					21-Jan-24 10:53:34	
					21-Jan-24 16:23:00	
					21-Jan-24 21:49:11	
					27-Jan-24 10:56:44	
					27-Jan-24 15:29:36	
					28-Jan-24 09:26:34	
					16-Mar-24 10:27:50	
					17-Mar-24 08:21:13	
					17-Mar-24 12:46:53	
					17-Mar-24 16:51:20	
					19-Mar-24 14:57:46	

III. Radio Log

RADIO PROMO DELHI

EPISODE	DATE	TIME SLOT	DURATION	EPISODE	DATE	TIME SLOT	DURATION	EPISODE	DATE	TIME SLOT	DURATION
EP 1 Promo Radio	12/13/2022	7:48:01AM	30 sec	EP 2 Promo Radio	02/24/2023	11:20:06AM	30 sec	Ep 5 Promo Radio	19-05-2023	15:23:08	30 sec
EP 1 Promo Radio	12/13/2022	8:24:11AM	30 sec	EP 2 Promo Radio	02/24/2023	5:52:35PM	30 sec	Ep 5 Promo Radio	19-05-2023	21:21:46	30 sec
EP 1 Promo Radio	12/13/2022	9:54:18AM	30 sec	EP 2 Promo Radio	02/24/2023	10:24:12PM	30 sec	Ep 5 Promo Radio	20-05-2023	11:54:03	30 sec
EP 1 Promo Radio	12/13/2022	10:22:39AM	30 sec					Ep 5 Promo Radio	20-05-2023	14:51:36	30 sec
EP 1 Promo Radio	12/13/2022	11:21:39AM	30 sec	EP 2 Promo Radio	02/25/2023	3:33:56PM	30 sec	Ep 5 Promo Radio	20-05-2023	19:49:06	30 sec
EP 1 Promo Radio	12/13/2022	11:35:19AM	30 sec	EP 2 Promo Radio	02/25/2023	6:52:56PM	30 sec	Ep 5 Promo Radio	21-05-2023	12:18:18	30 sec
EP 1 Promo Radio	12/13/2022	12:22:59PM	30 sec								
EP 1 Promo Radio	12/13/2022	1:37:39PM	30 sec	Ep 3 Promo Radio	03/24/2023	11:38:57AM	30 sec	Ep 6 Promo Radio	24-08-2023	19:53:25	30 sec
EP 1 Promo Radio	12/13/2022	2:22:09PM	30 sec	Ep 3 Promo Radio	03/24/2023	2:19:19PM	30 sec	Ep 6 Promo Radio	25-08-2023	07:35:26	30 sec
EP 1 Promo Radio	12/13/2022	3:40:11PM	30 sec	Ep 3 Promo Radio	03/24/2023	9:16:40PM	30 sec	Ep 6 Promo Radio	25-08-2023	14:38:00	30 sec
EP 1 Promo Radio	12/13/2022	4:36:07PM	30 sec					Ep 6 Promo Radio	25-08-2023	19:25:20	30 sec
EP 1 Promo Radio	12/13/2022	5:46:16PM	30 sec	Ep 3 Promo Radio	03/25/2023	9:20:43AM	30 sec	Ep 6 Promo Radio	26-08-2023	12:16:09	30 sec
EP 1 Promo Radio	12/13/2022	6:20:39PM	30 sec	Ep 3 Promo Radio	03/25/2023	12:18:24PM	30 sec	Ep 6 Promo Radio	26-08-2023	18:43:24	30 sec
EP 1 Promo Radio	12/13/2022	7:17:56PM	30 sec	Ep 3 Promo Radio	03/25/2023	7:55:35PM	30 sec				
EP 1 Promo Radio	12/13/2022	8:19:15PM	30 sec								
EP 1 Promo Radio	12/13/2022	8:48:17PM	30 sec	Ep 4 Promo Radio	29-04-2023	07:19:15	30 sec				
EP 1 Promo Radio	12/13/2022	9:21:18PM	30 sec	Ep 4 Promo Radio	29-04-2023	10:23:03	30 sec				
EP 1 Promo Radio	12/13/2022	9:51:44PM	30 sec	Ep 4 Promo Radio	29-04-2023	13:21:50	30 sec				
				Ep 4 Promo Radio	29-04-2023	16:21:55	30 sec				
				Ep 4 Promo Radio	29-04-2023	18:22:38	30 sec				
				Ep 4 Promo Radio	29-04-2023	18:48:36	30 sec				

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RADIO PROMO DELHI

EPISODE	DATE	TIME SLOT	DURATION	EPISODE	DATE	TIME SLOT	DURATION	EPISODE	DATE	TIME SLOT	DURATION
Ep 7 Promo Radio	08-09-2023	18:50:00	30 sec	Ep 7 Promo Radio	18-09-2023	13:36:00	30 sec	Ep 8 Promo Radio	21-10-2023	07:23:00	30 sec
Ep 7 Promo Radio	09-09-2023	08:50:00	30 sec	Ep 7 Promo Radio	18-09-2023	16:50:00	30 sec	Ep 8 Promo Radio	21-10-2023	11:36:00	30 sec
Ep 7 Promo Radio	09-09-2023	15:50:00	30 sec	Ep 7 Promo Radio	18-09-2023	18:50:00	30 sec	Ep 8 Promo Radio	21-10-2023	13:50:00	30 sec
Ep 7 Promo Radio	09-09-2023	18:36:00	30 sec	Ep 7 Promo Radio	18-09-2023	20:50:00	30 sec	Ep 8 Promo Radio	21-10-2023	15:50:00	30 sec
Ep 7 Promo Radio	10-09-2023	12:36:00	30 sec	Ep 7 Promo Radio	18-09-2023	21:50:00	30 sec	Ep 8 Promo Radio	21-10-2023	16:50:00	30 sec
Ep 7 Promo Radio	10-09-2023	18:36:00	30 sec	Ep 7 Promo Radio	19-09-2023	07:23:00	30 sec	Ep 8 Promo Radio	21-10-2023	20:50:00	30 sec
Ep 7 Promo Radio	10-09-2023	20:36:00	30 sec	Ep 7 Promo Radio	19-09-2023	11:50:00	30 sec	Ep 8 Promo Radio	21-10-2023	21:50:00	30 sec
Ep 7 Promo Radio	16-09-2023	08:36:00	30 sec	Ep 7 Promo Radio	19-09-2023	12:36:00	30 sec	Ep 8 Promo Radio	22-10-2023	07:36:00	30 sec
Ep 7 Promo Radio	16-09-2023	11:50:00	30 sec	Ep 7 Promo Radio	19-09-2023	13:23:00	30 sec	Ep 8 Promo Radio	22-10-2023	11:50:00	30 sec
Ep 7 Promo Radio	16-09-2023	16:36:00	30 sec	Ep 7 Promo Radio	19-09-2023	15:36:00	30 sec	Ep 8 Promo Radio	22-10-2023	12:36:00	30 sec
Ep 7 Promo Radio	16-09-2023	20:50:00	30 sec	Ep 7 Promo Radio	19-09-2023	17:50:00	30 sec	Ep 8 Promo Radio	22-10-2023	14:36:00	30 sec
Ep 7 Promo Radio	17-09-2023	08:36:00	30 sec	Ep 7 Promo Radio	19-09-2023	18:36:00	30 sec	Ep 8 Promo Radio	22-10-2023	16:50:00	30 sec
Ep 7 Promo Radio	17-09-2023	11:23:00	30 sec	Ep 7 Promo Radio	19-09-2023	21:36:00	30 sec	Ep 8 Promo Radio	22-10-2023	18:50:00	30 sec
Ep 7 Promo Radio	17-09-2023	12:23:00	30 sec	Ep 7 Promo Radio	20-09-2023	07:36:00	30 sec	Ep 8 Promo Radio	22-10-2023	20:23:00	30 sec
Ep 7 Promo Radio	17-09-2023	15:50:00	30 sec	Ep 7 Promo Radio	20-09-2023	17:50:00	30 sec	Ep 8 Promo Radio	22-10-2023	21:36:00	30 sec
Ep 7 Promo Radio	17-09-2023	17:36:00	30 sec	Ep 7 Promo Radio	20-09-2023	20:36:00	30 sec				
Ep 7 Promo Radio	17-09-2023	18:23:00	30 sec	Ep 7 Promo Radio	20-09-2023	21:36:00	30 sec				
Ep 7 Promo Radio	17-09-2023	19:23:00	30 sec	Ep 7 Promo Radio	21-09-2023	07:36:00	30 sec				
Ep 7 Promo Radio	17-09-2023	21:36:00	30 sec	Ep 7 Promo Radio	21-09-2023	15:36:00	30 sec				
Ep 7 Promo Radio	18-09-2023	07:50:00	30 sec	Ep 7 Promo Radio	21-09-2023	20:36:00	30 sec				
Ep 7 Promo Radio	18-09-2023	10:50:00	30 sec	Ep 7 Promo Radio	21-09-2023	21:50:00	30 sec				
Ep 7 Promo Radio	18-09-2023	11:50:00	30 sec								

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RADIO PROMO DELHI

EPISODE	DATE	TIME SLOT	DURATION	EPISODE	DATE	TIME SLOT	DURATION	EPISODE	DATE	TIME SLOT	DURATION	EPISODE	DATE	TIME SLOT	DURATION
Ep 9 Promo Radio	18-11-2023	07:36:00	30 sec	EP 10 VIRAM/30	20-01-2024	08:52:45	30	EP 11 VIRAM/30	16-03-2024	07:42:03	30	EP 12 VIRAM/30	13-04-2024	07:37:31	30
Ep 9 Promo Radio	18-11-2023	10:36:00	30 sec	EP 10 VIRAM/30	20-01-2024	09:19:03	30	EP 11 VIRAM/30	16-03-2024	11:39:11	30	EP 12 VIRAM/30	13-04-2024	08:18:16	30
Ep 9 Promo Radio	18-11-2023	12:50:00	30 sec	EP 10 VIRAM/30	20-01-2024	12:22:50	30	EP 11 VIRAM/30	16-03-2024	14:23:43	30	EP 12 VIRAM/30	13-04-2024	11:36:59	30
Ep 9 Promo Radio	18-11-2023	15:36:00	30 sec	EP 10 VIRAM/30	20-01-2024	14:49:34	30	EP 11 VIRAM/30	16-03-2024	15:23:58	30	EP 12 VIRAM/30	13-04-2024	12:37:02	30
Ep 9 Promo Radio	18-11-2023	17:50:00	30 sec	EP 10 VIRAM/30	20-01-2024	19:36:31	30	EP 11 VIRAM/30	16-03-2024	20:38:46	30	EP 12 VIRAM/30	13-04-2024	14:35:41	30
Ep 9 Promo Radio	18-11-2023	20:36:00	30 sec	EP 10 VIRAM/30	20-01-2024	21:28:07	30	EP 11 VIRAM/30	16-03-2024	21:48:26	30	EP 12 VIRAM/30	13-04-2024	16:36:32	30
Ep 9 Promo Radio	19-11-2023	07:50:00	30 sec	EP 10 VIRAM/30	21-01-2024	07:49:42	30	EP 11 VIRAM/30	17-03-2024	07:19:15	30	EP 12 VIRAM/30	13-04-2024	18:52:41	30
Ep 9 Promo Radio	19-11-2023	09:36:00	30 sec	EP 10 VIRAM/30	21-01-2024	11:47:30	30	EP 11 VIRAM/30	17-03-2024	10:48:15	30	EP 12 VIRAM/30	13-04-2024	20:53:17	30
Ep 9 Promo Radio	19-11-2023	11:50:00	30 sec	EP 10 VIRAM/30	21-01-2024	13:28:15	30	EP 11 VIRAM/30	17-03-2024	12:53:29	30	EP 12 VIRAM/30	13-04-2024	21:36:38	30
Ep 9 Promo Radio	19-11-2023	14:50:00	30 sec	EP 10 VIRAM/30	21-01-2024	16:36:39	30	EP 11 VIRAM/30	17-03-2024	15:35:22	30	EP 12 VIRAM/30	14-04-2024	07:35:28	
Ep 9 Promo Radio	19-11-2023	16:36:00	30 sec	EP 10 VIRAM/30	21-01-2024	18:53:41	30	EP 11 VIRAM/30	17-03-2024	18:34:40	30	EP 12 VIRAM/30	14-04-2024	10:37:18	30
Ep 9 Promo Radio	19-11-2023	20:50:00	30 sec	EP 10 VIRAM/30	21-01-2024	21:23:26	30	EP 11 VIRAM/30	17-03-2024	20:36:48	30	EP 12 VIRAM/30	14-04-2024	11:50:11	30
												EP 12 VIRAM/30	14-04-2024	12:52:50	30
												EP 12 VIRAM/30	14-04-2024	13:21:24	30
												EP 12 VIRAM/30	14-04-2024	14:20:58	30

RADIO PROMO MUMBAI

EPISODE	DATE	TIME SLOT	DURATION	EPISODE	DATE	TIME SLOT	DURATION	EPISODE	DATE	TIME SLOT	DURATION
EP 2 Promo Radio	02/24/2023	10:56:56AM	30 sec	Ep 5 Promo Radio	19-05-2023	12:19:51	30 sec	Ep 7 Promo Radio	08-09-2023	18:36:00	30 sec
EP 2 Promo Radio	02/24/2023	1:41:49PM	30 sec	Ep 5 Promo Radio	19-05-2023	18:21:05	30 sec	Ep 7 Promo Radio	09-09-2023	07:50:00	30 sec
EP 2 Promo Radio	02/24/2023	9:52:34PM	30 sec	Ep 5 Promo Radio	20-05-2023	07:39:21	30 sec	Ep 7 Promo Radio	09-09-2023	12:50:00	30 sec
				Ep 5 Promo Radio	20-05-2023	12:45:49	30 sec	Ep 7 Promo Radio	09-09-2023	18:50:00	30 sec
EP 2 Promo Radio	02/25/2023	1:45:16PM	30 sec	Ep 5 Promo Radio	20-05-2023	18:42:29	30 sec	Ep 7 Promo Radio	10-09-2023	12:50:00	30 sec
EP 2 Promo Radio	02/25/2023	6:33:47PM	30 sec	Ep 5 Promo Radio	21-05-2023	12:21:17	30 sec	Ep 7 Promo Radio	10-09-2023	18:50:00	30 sec
								Ep 7 Promo Radio	10-09-2023	19:50:00	30 sec
Ep 3 Promo Radio	03/24/2023	7:54:26AM	30 sec	Ep 6 Promo Radio	24-08-2023	18:34:50	30 sec	Ep 7 Promo Radio	16-09-2023	07:36:00	30 sec
Ep 3 Promo Radio	03/24/2023	12:35:06PM	30 sec	Ep 6 Promo Radio	25-08-2023	07:28:50	30 sec	Ep 7 Promo Radio	16-09-2023	12:23:00	30 sec
Ep 3 Promo Radio	03/24/2023	6:50:09PM	30 sec	Ep 6 Promo Radio	25-08-2023	12:19:07	30 sec	Ep 7 Promo Radio	16-09-2023	13:36:00	30 sec
				Ep 6 Promo Radio	25-08-2023	18:33:21	30 sec	Ep 7 Promo Radio	16-09-2023	18:23:00	30 sec
Ep 3 Promo Radio	03/25/2023	7:29:44AM	30 sec	Ep 6 Promo Radio	26-08-2023	12:19:43	30 sec	Ep 7 Promo Radio	17-09-2023	07:36:00	30 sec
Ep 3 Promo Radio	03/25/2023	12:46:51PM	30 sec	Ep 6 Promo Radio	26-08-2023	18:19:13	30 sec	Ep 7 Promo Radio	17-09-2023	08:36:00	30 sec
Ep 3 Promo Radio	03/25/2023	6:40:23PM	30 sec					Ep 7 Promo Radio	17-09-2023	12:23:00	30 sec
								Ep 7 Promo Radio	17-09-2023	13:23:00	30 sec
Ep 4 Promo Radio	29-04-2023	07:41:23	30 sec					Ep 7 Promo Radio	17-09-2023	17:36:00	30 sec
Ep 4 Promo Radio	29-04-2023	08:41:51	30 sec					Ep 7 Promo Radio	17-09-2023	18:36:00	30 sec
Ep 4 Promo Radio	29-04-2023	12:24:04	30 sec					Ep 7 Promo Radio	17-09-2023	19:36:00	30 sec
Ep 4 Promo Radio	29-04-2023	13:30:54	30 sec					Ep 7 Promo Radio	17-09-2023	20:36:00	30 sec
Ep 4 Promo Radio	29-04-2023	18:31:59	30 sec					Ep 7 Promo Radio	18-09-2023	07:36:00	30 sec
Ep 4 Promo Radio	29-04-2023	18:43:42	30 sec					Ep 7 Promo Radio	18-09-2023	08:36:00	30 sec

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RADIO PROMO MUMBAI

EPISODE	DATE	TIME SLOT	DURATION	EPISODE	DATE	TIME SLOT	DURATION	EPISODE	DATE	TIME SLOT	DURATION
Ep 7 Promo Radio	18-09-2023	09:36:00	30 sec	Ep 8 Promo Radio	21-10-2023	07:23:00	30 sec	Ep 9 Promo Radio	18-11-2023	07:23:00	30 sec
Ep 7 Promo Radio	18-09-2023	12:36:00	30 sec	Ep 8 Promo Radio	21-10-2023	08:36:00	30 sec	Ep 9 Promo Radio	18-11-2023	08:50:00	30 sec
Ep 7 Promo Radio	18-09-2023	13:50:00	30 sec	Ep 8 Promo Radio	21-10-2023	12:50:00	30 sec	Ep 9 Promo Radio	18-11-2023	12:50:00	30 sec
Ep 7 Promo Radio	18-09-2023	17:36:00	30 sec	Ep 8 Promo Radio	21-10-2023	13:36:00	30 sec	Ep 9 Promo Radio	18-11-2023	13:50:00	30 sec
Ep 7 Promo Radio	18-09-2023	18:36:00	30 sec	Ep 8 Promo Radio	21-10-2023	14:23:00	30 sec	Ep 9 Promo Radio	18-11-2023	17:23:00	30 sec
Ep 7 Promo Radio	18-09-2023	19:36:00	30 sec	Ep 8 Promo Radio	21-10-2023	18:36:00	30 sec	Ep 9 Promo Radio	18-11-2023	18:36:00	30 sec
Ep 7 Promo Radio	19-09-2023	07:36:00	30 sec	Ep 8 Promo Radio	21-10-2023	19:36:00	30 sec	Ep 9 Promo Radio	19-11-2023	07:36:00	30 sec
Ep 7 Promo Radio	19-09-2023	08:23:00	30 sec	Ep 8 Promo Radio	21-10-2023	20:36:00	30 sec	Ep 9 Promo Radio	19-11-2023	08:36:00	30 sec
Ep 7 Promo Radio	19-09-2023	12:36:00	30 sec	Ep 8 Promo Radio	22-10-2023	07:50:00	30 sec	Ep 9 Promo Radio	19-11-2023	12:50:00	30 sec
Ep 7 Promo Radio	19-09-2023	13:50:00	30 sec	Ep 8 Promo Radio	22-10-2023	08:23:00	30 sec	Ep 9 Promo Radio	19-11-2023	13:50:00	30 sec
Ep 7 Promo Radio	19-09-2023	14:50:00	30 sec	Ep 8 Promo Radio	22-10-2023	12:23:00	30 sec	Ep 9 Promo Radio	19-11-2023	17:50:00	30 sec
Ep 7 Promo Radio	19-09-2023	15:50:00	30 sec	Ep 8 Promo Radio	22-10-2023	13:36:00	30 sec	Ep 9 Promo Radio	19-11-2023	18:36:00	30 sec
Ep 7 Promo Radio	19-09-2023	17:36:00	30 sec	Ep 8 Promo Radio	22-10-2023	14:36:00	30 sec				
Ep 7 Promo Radio	19-09-2023	18:36:00	30 sec	Ep 8 Promo Radio	22-10-2023	18:23:00	30 sec				
Ep 7 Promo Radio	20-09-2023	07:36:00	30 sec	Ep 8 Promo Radio	22-10-2023	20:23:00	30 sec				
Ep 7 Promo Radio	20-09-2023	12:36:00	30 sec								
Ep 7 Promo Radio	20-09-2023	17:36:00	30 sec								
Ep 7 Promo Radio	20-09-2023	18:36:00	30 sec								
Ep 7 Promo Radio	21-09-2023	07:36:00	30 sec								
Ep 7 Promo Radio	21-09-2023	12:36:00	30 sec								
Ep 7 Promo Radio	21-09-2023	17:36:00	30 sec								
Ep 7 Promo Radio	21-09-2023	18:36:00	30 sec								

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RADIO PROMO MUMBAI

EPISODE	DATE	TIME SLOT	DURATION	EPISODE	DATE	TIME SLOT	DURATION	EPISODE	DATE	TIME SLOT	DURATION
EP 10 VIRAM/30	20-01-2024	07:48:41	30 sec	EP 11 VIRAM/30	16-03-2024	07:50:51	30	EP 12 VIRAM/30	13-04-2024	07:27:59	30
EP 10 VIRAM/30	20-01-2024	08:47:28	30 sec	EP 11 VIRAM/30	16-03-2024	08:34:39	30	EP 12 VIRAM/30	13-04-2024	08:11:52	30
EP 10 VIRAM/30	20-01-2024	12:16:24	30 sec	EP 11 VIRAM/30	16-03-2024	12:50:30	30	EP 12 VIRAM/30	13-04-2024	09:22:33	30
EP 10 VIRAM/30	20-01-2024	13:55:27	30 sec	EP 11 VIRAM/30	16-03-2024	13:51:10	30	EP 12 VIRAM/30	13-04-2024	12:31:37	30
EP 10 VIRAM/30	20-01-2024	18:39:21	30 sec	EP 11 VIRAM/30	16-03-2024	18:15:24	30	EP 12 VIRAM/30	13-04-2024	13:50:02	30
EP 10 VIRAM/30	20-01-2024	19:24:58	30 sec	EP 11 VIRAM/30	16-03-2024	19:18:13	30	EP 12 VIRAM/30	13-04-2024	14:45:59	30
EP 10 VIRAM/30	21-01-2024	07:20:38	30 sec	EP 11 VIRAM/30	17-03-2024	07:44:17	30	EP 12 VIRAM/30	13-04-2024	18:17:48	30
EP 10 VIRAM/30	21-01-2024	08:18:41	30 sec	EP 11 VIRAM/30	17-03-2024	08:54:02	30	EP 12 VIRAM/30	13-04-2024	19:06:06	30
EP 10 VIRAM/30	21-01-2024	12:20:21	30 sec	EP 11 VIRAM/30	17-03-2024	12:49:29	30	EP 12 VIRAM/30	13-04-2024	20:21:37	30
EP 10 VIRAM/30	21-01-2024	13:21:10	30 sec	EP 11 VIRAM/30	17-03-2024	13:33:12	30	EP 12 VIRAM/30	14-04-2024	07:33:22	30
EP 10 VIRAM/30	21-01-2024	18:18:31	30 sec	EP 11 VIRAM/30	17-03-2024	18:43:40	30	EP 12 VIRAM/30	14-04-2024	08:19:47	30
EP 10 VIRAM/30	21-01-2024	19:17:28	30 sec	EP 11 VIRAM/30	17-03-2024	19:49:32	30	EP 12 VIRAM/30	14-04-2024	09:25:48	30
								EP 12 VIRAM/30	14-04-2024	12:31:21	30
								EP 12 VIRAM/30	14-04-2024	13:37:01	30
								EP 12 VIRAM/30	14-04-2024	14:19:02	30

RADIO PROMO KOLKATA

EPISODE	DATE	TIME SLOT	DURATION	EPISODE	DATE	TIME SLOT	DURATION	EPISODE	DATE	TIME SLOT	DURATION
EP 1 Promo Radio	12/13/2022	7:35:10AM	30 sec	Ep 3 Promo Radio	03/24/2023	1:24:59PM	30 sec	Ep 7 Promo Radio	08-09-2023	18:50:00	30 sec
EP 1 Promo Radio	12/13/2022	8:21:20AM	30 sec	Ep 3 Promo Radio	03/25/2023	7:22:57AM	30 sec	Ep 7 Promo Radio	09-09-2023	12:36:00	30 sec
EP 1 Promo Radio	12/13/2022	9:58:07AM	30 sec	Ep 3 Promo Radio		6:27:03PM	30 sec	Ep 7 Promo Radio	09-09-2023	18:23:00	30 sec
EP 1 Promo Radio	12/13/2022	10:20:24AM	30 sec					Ep 7 Promo Radio	10-09-2023	18:36:00	30 sec
EP 1 Promo Radio	12/13/2022	11:52:24AM	30 sec	Ep 4 Promo Radio	29-04-2023	07:25:31	30 sec	Ep 7 Promo Radio	16-09-2023	07:50:00	30 sec
EP 1 Promo Radio	12/13/2022	12:39:57PM	30 sec	Ep 4 Promo Radio	29-04-2023	12:55:15	30 sec	Ep 7 Promo Radio	16-09-2023	12:36:00	30 sec
EP 1 Promo Radio	12/13/2022	1:54:08PM	30 sec	Ep 4 Promo Radio	29-04-2023	18:28:57	30 sec	Ep 7 Promo Radio	17-09-2023	07:50:00	30 sec
EP 1 Promo Radio	12/13/2022	2:25:26PM	30 sec					Ep 7 Promo Radio	17-09-2023	12:50:00	30 sec
EP 1 Promo Radio	12/13/2022	3:39:07PM	30 sec	Ep 5 Promo Radio	19-05-2023	12:39:05	30 sec	Ep 7 Promo Radio	17-09-2023	18:50:00	30 sec
EP 1 Promo Radio	12/13/2022	4:24:51PM	30 sec	Ep 5 Promo Radio	20-05-2023	18:26:02	30 sec	Ep 7 Promo Radio	17-09-2023	19:50:00	30 sec
EP 1 Promo Radio	12/13/2022	6:21:35PM	30 sec	Ep 5 Promo Radio	21-05-2023	12:32:52	30 sec	Ep 7 Promo Radio	18-09-2023	12:36:00	30 sec
EP 1 Promo Radio	12/13/2022	7:37:54PM	30 sec					Ep 7 Promo Radio	18-09-2023	13:50:00	30 sec
EP 1 Promo Radio	12/13/2022	8:53:44PM	30 sec	Ep 6 Promo Radio	24-08-2023	18:53:26	30 sec	Ep 7 Promo Radio	18-09-2023	18:36:00	30 sec
EP 1 Promo Radio	12/13/2022	9:18:25PM	30 sec	Ep 6 Promo Radio	25-08-2023	12:40:22	30 sec	Ep 7 Promo Radio	18-09-2023	19:36:00	30 sec
EP 1 Promo Radio	12/13/2022	10:36:39PM	30 sec	Ep 6 Promo Radio	26-08-2023	18:34:39	30 sec	Ep 7 Promo Radio	19-09-2023	07:23:00	30 sec
								Ep 7 Promo Radio	19-09-2023	12:23:00	30 sec
EP 2 Promo Radio	02/24/2023	10:53:34AM	30 sec					Ep 7 Promo Radio	19-09-2023	13:23:00	30 sec
EP 2 Promo Radio	02/24/2023	3:50:36PM	30 sec					Ep 7 Promo Radio	19-09-2023	20:23:00	30 sec
EP 2 Promo Radio	02/24/2023	8:22:02PM	30 sec					Ep 7 Promo Radio	20-09-2023	13:23:00	30 sec
								Ep 7 Promo Radio	20-09-2023	18:50:00	30 sec
EP 2 Promo Radio	02/25/2023	12:54:40PM	30 sec					Ep 7 Promo Radio	21-09-2023	12:36:00	30 sec
EP 2 Promo Radio	02/25/2023	6:53:00PM	30 sec					Ep 7 Promo Radio	21-09-2023	18:36:00	30 sec

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RADIO PROMO KOLKATA

EPISODE	DATE	TIME SLOT	DURATION	EPISODE	DATE	TIME SLOT	DURATION	EPISODE	DATE	TIME SLOT	DURATION	EPISODE	DATE	TIME SLOT	DURATION
Ep 8 Promo Radio	21-10-2023	07:50:00	30 sec	EP 10 VIRAM/30	20-01-2024	07:51:13	30 sec	EP 11 VIRAM/30	16-03-2024	07:51:36	30	EP 12 VIRAM/30	13-04-2024	07:37:25	30
Ep 8 Promo Radio	21-10-2023	12:23:00	30 sec	EP 10 VIRAM/30	20-01-2024	08:50:26	30 sec	EP 11 VIRAM/30	16-03-2024	08:52:26	30	EP 12 VIRAM/30	13-04-2024	08:18:03	30
Ep 8 Promo Radio	21-10-2023	18:36:00	30 sec	EP 10 VIRAM/30	20-01-2024	12:48:33	30 sec	EP 11 VIRAM/30	16-03-2024	12:48:54	30	EP 12 VIRAM/30	13-04-2024	12:18:09	30
Ep 8 Promo Radio	22-10-2023	07:50:00	30 sec	EP 10 VIRAM/30	20-01-2024	13:37:21	30 sec	EP 11 VIRAM/30	16-03-2024	13:53:16	30	EP 12 VIRAM/30	13-04-2024	13:52:25	30
Ep 8 Promo Radio	22-10-2023	12:23:00	30 sec	EP 10 VIRAM/30	20-01-2024	18:48:58	30 sec	EP 11 VIRAM/30	16-03-2024	18:50:05	30	EP 12 VIRAM/30	13-04-2024	18:34:55	30
Ep 8 Promo Radio	22-10-2023	18:23:00	30 sec	EP 10 VIRAM/30	20-01-2024	19:27:28	30 sec	EP 11 VIRAM/30	16-03-2024	19:43:26	30	EP 12 VIRAM/30	13-04-2024	19:18:24	30
				EP 10 VIRAM/30	21-01-2024	07:35:01	30 sec	EP 11 VIRAM/30	17-03-2024	07:47:45	30	EP 12 VIRAM/30	14-04-2024	07:53:46	30
Ep 9 Promo Radio	18-11-2023	07:50:00	30 sec	EP 10 VIRAM/30	21-01-2024	08:38:45	30 sec	EP 11 VIRAM/30	17-03-2024	08:38:17	30	EP 12 VIRAM/30	14-04-2024	08:39:45	30
Ep 9 Promo Radio	18-11-2023	08:36:00	30 sec	EP 10 VIRAM/30	21-01-2024	12:18:20	30 sec	EP 11 VIRAM/30	17-03-2024	12:42:04	30	EP 12 VIRAM/30	14-04-2024	12:40:38	30
Ep 9 Promo Radio	18-11-2023	12:36:00	30 sec	EP 10 VIRAM/30	21-01-2024	13:18:06	30 sec	EP 11 VIRAM/30	17-03-2024	13:53:57	30	EP 12 VIRAM/30	14-04-2024	13:45:29	30
Ep 9 Promo Radio	18-11-2023	13:36:00	30 sec	EP 10 VIRAM/30	21-01-2024	18:47:45	30 sec	EP 11 VIRAM/30	17-03-2024	18:35:54	30				
Ep 9 Promo Radio	18-11-2023	18:23:00	30 sec	EP 10 VIRAM/30	21-01-2024	19:23:55	30 sec	EP 11 VIRAM/30	17-03-2024	19:35:56	30				
Ep 9 Promo Radio	18-11-2023	19:36:00	30 sec												
Ep 9 Promo Radio	19-11-2023	07:36:00	30 sec												
Ep 9 Promo Radio	19-11-2023	08:36:00	30 sec												
Ep 9 Promo Radio	19-11-2023	12:36:00	30 sec												
Ep 9 Promo Radio	19-11-2023	13:36:00	30 sec												
Ep 9 Promo Radio	19-11-2023	18:50:00	30 sec												
Ep 9 Promo Radio	19-11-2023	19:23:00	30 sec												

ANNEXURE B

IV. Ministries and Government Organisations

Ministry of Environment, Forest and Climate Change

Ministry of Environment, Forest and Climate Change

National Commission on Population

Ministry of Road Transport & Highways
Government of India

Ministry of Road Transport and Highways

जल शक्ति मंत्रालय
MINISTRY OF
JAL SHAKTI

Ministry of Jal Shakti

Delhi Jal Board

Delhi Jal Board

Wildlife Trust of India

Wildlife Trust of India

उपभोक्ता मामले विभाग
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