

Topics - MINDS MAPS included (Daily current affairs 9th January 2025)



- Target UPSC CSE Prelims 2025
- **India's Progress in a Democratic Framework**
- **Androgen Hormones and Their Role in Chickens**
- **The Right to Food Crisis in Jharkhand, Odisha, and Bihar**
- **KEN -BETWA LINK**
- **The Right to Food Crisis in Jharkhand, Odisha, and Bihar**
- **The Rise of China's Political Influence in Africa**
- **The Indus Valley Civilisation:**
- **Nimrud: An Ancient Assyrian City**
- **Mains**



By saurabh Pandey



THE HINDU

Target Mains -2025/26 -

Q “ Food security depends on effective supply chain from farm to consumer ” Explain

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Q. The mission for Compact Research Module for Orbital Plant Studies has recently been launched by which among the following Space agency. (IE)

A) European Space Agency. (ESA)

**B) National Aeronautics and Space
Administration (NASA)**

**C) China National Space
Administration (CNSA)**

**D) Indian Space and Research
Organisation (ISRO)**

Schedule CRASH COURSE ON UPSC CSE Prelims 2025
(Upcoming week, 6th to 11th January)

Monday	6 th January 2025	Indian Geography through Mapping of INDIA (Mountain)
Wednesday	8 th January 2025	Indian GEOGRAPHY through mapping (Passes, Rivers)
Friday	10 th January 2025	Agriculture for GS
Saturday	11 th January 2025	Agriculture for GS

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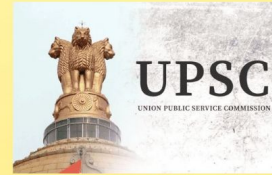
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India balancing on twin pillars of technology, tradition: Jaishankar

At the Youth Pravasi Bharatiya Divas, External Affairs Minister says the nation's quest is unique because development is based on a democratic framework; he lauded the youth, at home and abroad, for contribution to innovations in every sector

Satyasundar Barik
BHUBANESWAR

India is progressing within a democratic framework, balancing on the twin pillars of technology and tradition, said External Affairs Minister S. Jaishankar at the Youth Pravasi Bharatiya Divas (PBD) in Bhubaneswar on Wednesday.

"We are today well on the way to address long-standing challenges to build a modern, inclusive and progressive society. Our quest is unique because the largest nation in the world is developing in that manner in a democratic framework. The mantra of that journey is to advance, as Prime Minister Narendra Modi says, on the two legs of technology and tradition," Mr. Jaishankar remarked.

The youth of the country can be the defining factor in the pace of that endeavour and the realisation of the goals, he added.

Mr. Modi is scheduled to inaugurate the PBD on Thursday.



External Affairs Minister S. Jaishankar, Sports Minister Mansukh Mandaviya, Odisha CM Mohan Majhi and Minister of State for External Affairs Pabitra Margherita in Bhubaneswar on Wednesday. ANI

Stating that the thought behind holding a Youth PBD was to recognise the special contribution that young minds make, at home and abroad, Mr. Jaishankar said, "At a time when so many key developments in the world are being shaped by this younger generation – whether we talk of AI and EV, innovation or start-ups, space or drones, sports, chess, cricket – there is all the more reason to do so."

"The very country that was predicted to go under ended up supplying vaccines and medicines to the entire world. A different but equally telling example is what we see in the realm of space, where there is a growing competition internationally. Our Chandrayaan-3 landing, the Aditya L1 observatory and the proposed Gaganyaan mission are powerful inspirations," the Union Minister said.

"In a digital era, the scale of UPI transactions speaks volumes, both of our infrastructure and of our mindsets. The new India, with 90,000 start-ups and 100-plus unicorns, has calling cards like Drone Di, Atal Tinkering Labs, hackathons, green hydrogen mission and nano-fertilizers," he said.

Guest of honour Dev Pragad, a person of Indian origin and chief executive officer of *Newsweek*, narrat-

ed how diligent effort had enabled a turnaround of the American media organisation that he helms.

Odisha in focus

Odisha Chief Minister Mohan Charan Majhi took the opportunity to showcase the State's strength in mineral resources, tourism and human resources.

"While Odisha's past is steeped in history, its present is defined by transformation and progress. Today, Odisha stands as a leader in mining and industries such as steel and aluminium, while also emerging as a hub for sports, IT and skill development," Mr. Majhi said.


At a business session on the sidelines of PBD 2025, Mr. Jaishankar focused on the 3Ts – Trade, Technology, and Tourism – as critical drivers of Odisha's growth.

He lauded the State's rich natural and cultural advantages, which position it as a hub for global trade, a fertile ground for technological innovation, and a premier tourism destination.


Topic → India's Progress in a Democratic Framework


Advancing Democracy with Technology and Tradition

 India is advancing within a democratic framework, balancing technology and tradition, as stated by External Affairs Minister S. Jaishankar.


 The youth are seen as a crucial factor in achieving the goals of a modern, inclusive, and progressive society

Achievements in Various Fields

 India has made significant strides in fields like AI, space exploration, and start-ups, showcasing the contributions of the younger generation.

 India has emerged as a global supplier of vaccines and medicines, countering predictions of decline.

Thriving Digital Economy and Regional Development

 The country boasts a thriving digital economy with 90,000 start-ups and over 100 unicorns, highlighting its innovative spirit.

 Odisha is positioned as a leader in mining, industries, and tourism, with a focus on transformation and progress.

 The 3Ts—Trade, Technology, and Tourism—are emphasized as key drivers for Odisha's growth and development

Summary: India is progressing as a democratic nation by leveraging technology and tradition, with a strong emphasis on youth contributions and regional development, particularly in Odisha

Female birds 'can't reproduce without male sex hormones'

Male and female chickens lacking the androgen receptor showed differences in various aspects. These aspects were hormone-dependent. Surprisingly, certain male traits, for example the length of tail feathers and of spurs, remained unaffected by the genetic modification

Madhurima Pattanayak

The androgen sex hormones are responsible for male sexual development while oestrogen and progesterone essay the same roles in females. But new research by a team at the Max Planck Institute of Biological Intelligence and Technical University, Munich, could force scientists to redraw these boundaries. The team has reported that androgen receptors are as important for sexual development and fertility in females as in males.

Specifically, the researchers found that both male and female chickens devoid of androgen receptors turned out to be infertile. But the males still developed testicles and the females ovaries, and produced gonadal hormones. The testicles and ovaries were smaller than in chickens that retained their androgen receptors.

Additionally, female chickens that lacked the receptors failed to develop and lay eggs. And while a few sex-specific peculiarities like tail feathers, spurs, and differences in body size and weight persisted in both sexes, their sexual behaviours failed to develop. Their eye rings remained unpigmented as well.

For years, one of the key players in avian sexual development has been reported to be testosterone, a steroid hormone belonging to the class of hormones called androgens, commonly thought of as only a male hormone." Mehla Rudra, a scientist at the Max Planck Institute of Biological Intelligence and a coauthor of the study, said. "One of the key insights this study provides is that testosterone action via androgen signalling is critical in both male and female birds."

The study illustrates that androgen receptors directly influenced diverse tissues leading to sex-specific phenotypes. In females, too, the effects of androgens are to promote the development of head ornaments and normal ovarian follicle," Peter O'Shaughnessy, a scientist at the University of Glasgow who wasn't involved in the study, said.

Androgen hormones are known to decrease body weight in chickens. Male chickens in commercial settings are thus castrated to prevent androgen secretion and thus increase their body weight.

In birds, androgen and oestrogen receptors help regulate sexual development by mediating the actions of these hormones. Unlike mammals, avian somatic cells (cells other than sperm and ova) also manifest sexual traits independent of hormonal influences. "These characteristics are independent of hormonal influence," Rudra said.

The shrinkage that wasn't

The bursa of Fabricius, aka the cloacal thymus, is a chestnut-shaped lymphoid organ in birds that develops antibodies and B lymphocytes. This organ is also known to be involved in sexual growth and maturation. When a chicken reaches pubescence – around 15-20 weeks after birth – the bursa of Fabricius shrinks in size.

This bursal involution is an androgen-sensitive characteristic that shows sexual development has begun. In the new study, chickens of both sexes lacking androgen receptors had delayed bursal involution. In some cases, the



In the study, female chickens that lacked androgen receptors failed to develop and lay eggs. Representative image. STEPHEN MEERENDORF

shrinkage didn't even begin.

According to the researchers, the shrinkage could be the result of cells dying in the bursa of Fabricius in response to the activity of the androgen receptors. When the scientists exposed the embryos without the ability to develop androgen receptors to testosterone, bursal involution still didn't happen. But in embryos that could develop the receptors, the shrinkage happened as well.

Of crows and combs

The bodies of roosters and male chickens have a circadian rhythm, or internal body clock, that sends strong signals for them to crow at dawn. The neural circuit associated with this crowing behaviour is sensitive to the presence of androgen hormones, especially testosterone.

In the study, male chickens without androgen receptors didn't crow even when they were exposed to testosterone a week after hatching. Their receptor-positive counterparts crowed. The researchers figured that the neural circuits responsible for crowing behavior couldn't fully develop in the absence of the receptors. Scientists already knew the syringeal motor nucleus in the hindbrain and specific midbrain regions govern crowing patterns in birds.

Likewise, comb development – an important sign of sexual maturation among chickens – didn't occur in male or female chickens lacking androgen receptors, even after they were exposed to testosterone. Receptor-positive chickens began to develop combs within 15-20 days after exposure to testosterone.

Previous studies have reported the basal layer of the comb epidermis – called the stratum germinativum – is a place where androgen-receptor genes are expressed, suggesting comb development depends on the presence of the receptors. As O'Shaughnessy put it, "The effects

of androgens in both sexes appear to be prominent in the sexually dimorphic regions of the head and gonads".

In birds unlike in mammals

A 2021 study examined male chickens whose testicles had been replaced with ovaries through genetic modification. These chickens developed their complete sexual ornaments – which shouldn't have been possible if sexual phenotypic characters were entirely under the influence of the testicular hormones. The study thus challenged the canon that these sexual characteristics in birds are regulated only by testicular hormones and external sex organs, sexual characteristics, and behaviours, couldn't develop properly.

Androgen and oestrogen hormones play their respective roles once they bind to their corresponding receptors. The death or impairment of these receptors eventually disrupts the function of the hormone binding to them.

To understand the function of androgen receptors in avian sexual development, the researchers blocked receptor functions – and thus androgen signalling – by knocking off the genes required to develop the receptors using CRISPR-Cas9.

"The methods used in this study are appropriate and the data are reliable," O'Shaughnessy said.

Necessary but insufficient

In sum, male chickens devoid of androgen receptors didn't display an overall female phenotype – and nor did female chickens lacking in androgen receptors develop an all-male phenotype. A 2018 study in the *Journal of Physiology A* reported that while oestrogen receptors could contribute to sexual development in birds of both

Androgen signalling plays a crucial role in the development, fertility, physiology and appearance of both sexes as well as sex-specific crowing behaviour in males

sexes, oestrogen signalling alone was insufficient for complete sexual maturation.

"The mechanism of testosterone action in the brain is complex," Rudra said.

"Testosterone binds to androgen receptors – However, in the brain, testosterone is also converted to oestrogen and exerts its role by binding to estrogen receptors, making the understanding of testosterone-mediated effects quite complicated."

According to her, the study shows androgen signalling plays a crucial role in the development, fertility, physiology and appearance of both sexes as well as sex-specific crowing behaviour in males.

"The findings in the current study are valid," O'Shaughnessy said.


Male and female chickens lacking the androgen receptor showed clear differences in various aspects compared to their normal counterparts. These aspects were hormone-dependent. Surprisingly, certain male traits, e.g. the length of tail feathers and of spurs, remained unaffected by the genetic modification.

"These traits are thus controlled by either another hormone system or something entirely different. Thus it appears that the sexual development of birds involves a complex interaction of both hormone-dependent and hormone-independent mechanisms," Rudra said.


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Topic → Androgen Hormones and Their Role in Chickens


Key Insights

 Androgen Hormones: Essential for male sexual development; oestrogen and progesterone play similar roles in females.


 Research Findings: Max Planck Institute study highlights the importance of androgen receptors for sexual development and fertility in chickens.

 Infertility in Absence of Receptors: Chickens without androgen receptors are infertile, with underdeveloped testicles and ovaries.

 Female Development Issues: Lack of androgen receptors in female chickens leads to failure in egg development and laying.

 Sex-Specific Traits: Some traits like tail feathers and body size remain, but sexual behaviors and pigmentation are affected.



 Impact on Body Weight: Androgens reduce body weight, influencing practices like male castration for weight gain.

 Independent Sexual Traits: Certain avian sexual traits can develop independently of hormones

Summary: Recent research underscores the critical role of androgen receptors in the sexual development and fertility of chickens, offering new insights into avian biology

River interlinking, the fount of environmental disaster



In December 25, 2024, Prime Minister Narendra Modi laid the foundation stone for the Ken-Betwa River Link Project, which aims to solve the water scarcity in the Bundelkhand region that covers parts of Uttar Pradesh and Madhya Pradesh. The project also includes the construction of a dam located within the Panna Tiger Reserve, raising concerns about its submergence. Upon completion, this project will link the supposed water surplus Ken river with the Betwa in drought-stricken Bundelkhand – an area that had 58% forest cover in 1938.

A misplaced model

This project, which costs around ₹45,000 crore, was launched despite the objections raised by experts, including members of an empowered committee appointed by the Supreme Court of India, and by circumventing the law that has strict terms for allowing hydroelectric power projects. Models of grandiose technological fixes as the solution to all water-related problems have gathered momentum. Politicians are now touting the concept of river interlinking for inter-basin water transfers as a geoengineering solution to continued water depletion in India.

The concept of inter-basin transfer was proposed 130 years ago by Sir Arthur Cotton, who designed irrigation dams in the Godavari and Krishna river valleys. M. Visvesvaraya, an early icon among Indian engineers, further refined this idea. K.L. Rao and Captain Dinshaw J. Dastur subsequently expanded the scope of this concept in 1970 and 1980. Initially termed the 'National Water Grid', this concept re-emerged as the 'River-Interlinking Project' (ILR) from the Ministry of Water Resources to transfer surplus waters from the Ganga and the Brahmaputra to water-deficient regions in central and southern India.

Following this, the National Water Development Agency (NWDA) was established in 1982 to conduct surveys and investigations, and to prepare feasibility reports for links under the National Perspective Plan. The NWDA identified 30 links for feasibility studies, divided into 14 Himalayan and 16 Peninsular river links. These links are anticipated to alleviate the impacts of floods and droughts, boost income in rural areas, and address water distress in agriculture.

The currently estimated cost of ₹5.5 lakh crore does not include the social, environmental and operational costs. Ultimately, all this will end up



C.P. Rajendran

Adjunct Professor at the National Institute of Advanced Studies, Bengaluru, and an author of the book, 'The Rumbling Earth – The Story of Indian Earthquakes'

The political class must note that the lofty idea of interlinking rivers overlooks the huge environmental costs and the eventual deaths of rivers and deltaic regions

as taxes on the common man. This lofty idea of interlinking the rivers, to connect surplus rivers of the country with the deficient rivers is fundamentally flawed as it overlooks the huge environmental costs and the eventual deaths of the rivers and deltaic regions.

The uncontrolled human-induced disequilibrium in natural hydrographic systems will destroy associated ecological niches with incalculable repercussions for the long-term well-being of society – an unpardonable disservice to future generations. We may also have to factor in the consequences of climate change impacting rainfall and river flow, which will aggravate the situation. It is unclear how the nation's declared commitment to mitigating human-induced climate change and river manipulation go hand in hand.

The eco-services of rivers

Policy makers ignore the point that there is no "free" surplus water in any river and simple elementary arithmetic rationalisations such as tapping the 'water lost to sea' do not consider the eco-hydrological dimensions of the issue. The supporters of these projects and the politicians do not understand or deliberately ignore viewing the river as a part of the drainage basin with constitutive ecological niches, which includes its final destination of deltaic plains, interfacing with the sea.

The eco-services of the free-flowing rivers include the flushing of silt from riverbeds to the coastal waters to form deltas. Flood water is not to be rationalised as 'surplus'. It needs to be seen as the carrier of minerals for land fertility, groundwater recharge and sustenance of biodiversity, which finally helps the livelihood of millions of marginalised people.

By diverting river water, deltaic regions are starved of water that could have helped balance saltwater from the sea. Now, however, the deltaic ecosystem will suffer from the change. The Indus Delta offers a crucial lesson. Alice Albinia, in her book, *Empires of the Indus: The Story of a River* (2008), narrates how a delta system at the mouth of the Indus – which was once "the richest in all Pakistan" – became impoverished when the British started barrage construction, which Pakistan continued after 1947.

Such examples are aplenty in India as well. The state of the downstream parts of the Narmada since the completion of the Sardar Sarovar dam is a modern example in the making.

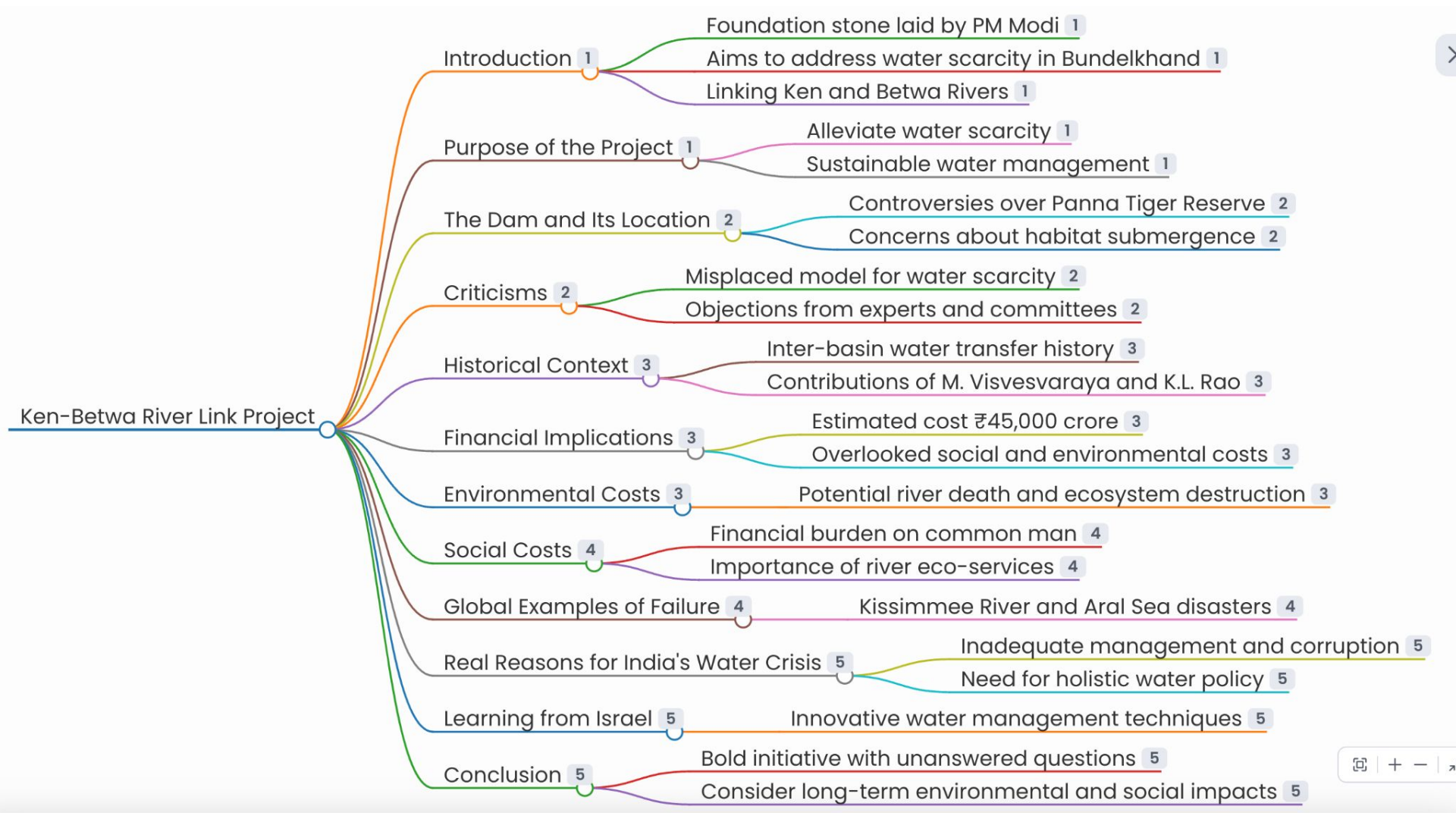
The global examples of river channelisation have also proved to be major disasters. The channelisation of the Kissimmee river in the State of Florida, authorised by the U.S. Congress in 1954 to mitigate flooding, is an environmental disaster, resulting in the loss of wetlands. Massive resources are being spent to revive its original configuration. The current state of the Aral Sea – one of the world's largest lakes – is another example of how geoengineering projects destroy natural systems. The lake has now become a howling desert after the rivers that sustained it were diverted by irrigation projects implemented during the heady days of the Soviet Union.

The real reasons for India's water crisis

India's water crisis is spiralling out of control, primarily due to inadequate water management, poor environmental practices, law ambiguity, and corruption. A national water policy should embrace a holistic approach to watershed management, involving local citizens in monitoring the hydrological cycle and working alongside hydrologists, engineers, and biologists. The policy must incorporate effective aquifer management through the regulation of water usage. Farmers should be engaged to help devise strategies for efficient irrigation water usage. The government has limited control over wastewater management and should create innovative reuse programmes. A comprehensive study involving interdisciplinary expertise on river basins is essential before initiating significant water transfer projects.

In the book, *Let There Be Water: Israel's Solution for a Water-Starved World*, Seth M. Siegel notes that Israel's drip irrigation programmes save 25%-75% of pumped water. Israel's success story in water resource management lies in modernising irrigation techniques. This also compels farmers to use less water, fertilisers and pesticides, maintaining aquifer health at an optimum level. Along with such interventions, we must incorporate elements of vernacular practices in watershed management strategies.

Despite the current ruling regime's emphasis on 'Hindutva' and embedded Hindu belief system that extols the deityship of Indian rivers, the river interlinking project stands out as a stark contrast to such an ideology. Manipulated by dams that are in excess, mauled by human and industrial waste, and commodified for religious marketing, India's rivers are under existential threat. Who will save them?



Topic -- KEN -BETWA LINK

Introduction

On December 25, 2024, Prime Minister Narendra Modi laid the foundation stone for the Ken-Betwa River Link Project, a significant initiative aimed at addressing the water scarcity issues plaguing the Bundelkhand region, which spans parts of Uttar Pradesh and Madhya Pradesh.

Foundation Stone

The inauguration of this project was a momentous occasion, symbolizing hope for many in Bundelkhand. The project aims to link the Ken River, which is believed to have surplus water, with the drought-stricken Betwa River. But is this really the solution?

Purpose of the Project

The primary goal of the Ken-Betwa River Link Project is to alleviate the severe water scarcity that has plagued Bundelkhand for years. With a history of 58% forest cover in 1938, the region has faced drastic changes, leading to a desperate need for sustainable water management.

The Dam and Its Location

However, the project is not without its controversies. The construction of a dam within the Panna Tiger Reserve raises significant concerns about the potential submergence of critical habitats.

A Misplaced Model

Critics argue that this project is a misplaced model for addressing water scarcity. Despite objections from experts and an empowered committee appointed by the Supreme Court of India, the project has moved forward, raising eyebrows about the decision-making process.

Historical Context

The concept of inter-basin water transfer isn't new. It dates back 130 years to Sir Arthur Cotton, who envisioned irrigation solutions for India. Yet, despite decades of development, are we still stuck in the same old patterns?

Key Figures in River Engineering

Engineers like M. Visvesvaraya and K.L. Rao have contributed significantly to this field, but their ideas have evolved into a grandiose vision that may not be practical in today's context.

Financial Implications

The estimated cost of the Ken-Betwa project is around ₹45,000 crore, but this figure doesn't account for the social and environmental costs that will inevitably arise.

Environmental Costs

The environmental implications of such projects are often overlooked. The potential death of rivers and the destruction of ecosystems could have long-lasting effects that we can't afford to ignore.

Social Costs

Ultimately, the financial burden will fall on the common man, raising questions about fairness of such projects.

The Eco-Services of Rivers

Rivers provide essential eco-services that are often taken for granted. They are not just water sources; they are lifelines for biodiversity and agriculture.

The Deltaic Ecosystem

Diverting river water can starve deltaic regions of the resources they need to thrive. The consequences of such actions can be dire, as seen in the Indus Delta's decline.

Global Examples of Failure

History has shown us that river channelization can lead to environmental disasters. The Kissimmee River in Florida and the Aral Sea are stark reminders of what can happen when we manipulate natural systems without understanding the consequences.

The Real Reasons for India's Water Crisis

India's water crisis is a complex issue rooted in inadequate management, poor environmental practices, and corruption. It's not just about building dams; it's about rethinking our entire approach to water.

Need for Holistic Management

A national water policy should embrace a holistic approach, involving local communities in monitoring and managing water resources. This is not just a government issue; it's a collective responsibility.

Learning from Israel

Countries like Israel have shown that innovative water management techniques, such as drip irrigation, can save significant amounts of water.

Conclusion

The Ken-Betwa River Link Project is a bold initiative, but it raises more questions than answers. As we move forward, we must consider the long-term implications of our actions on the environment and society.

The right to food and the struggle with the PDS

In 2023, there was a report discussing the right to food in the context of Jharkhand. Similarly, a few days ago, there was another report that was in the context of Odisha. These reports highlighted something alarming – that a substantial number of households have been removed from the rolls of the Public Distribution System (PDS). This disturbing situation is not limited to Jharkhand and Odisha. Bihar, another State in the east-central region, has its own PDS tragedy.

The example of the Musahar community

Bihar was blighted by a supply crisis, when rations were needed the most, at the time of the COVID-19 pandemic. Since then, there are communities which continue to be in want of a stable supply of ration. This is more notable among extremely marginalised communities such as the Musahars. This is a community that has been pushed beyond the edge of destitution by the socio-politics of caste. Its struggle with the PDS emerges as a significant symptom of the same.

A number of Musahar households in Patna district do not have an active ration card. Even if they do have one, there is another problem – the card does not have the names of all the family members.

There are also several people who have lost access to their monthly supply of ration ever since biometric verification was made mandatory at fair price shops (FPS). In such cases, the individuals concerned are forced to get a new ration card as after verification it emerges that their names have been struck off the PDS rolls. The ruling dispensation and its over the top marketing of 'smart cities' clearly posits before us the disconnect between the government and the people most in need of state welfare.



Ananye Krishna

Field Researcher at
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Trust



Shailendra Kumar

Field Researcher at
the DEVISE Charitable
Trust

Bureaucratic hurdles are a reason why a substantial number of households have found themselves removed from PDS rolls in parts of north, central and east India

Problems with the PDS are not limited to enrolment and access. There is also the flow of corruption through the veins of the system. Households enrolled with the PDS have reported that FPS dealers have been releasing only four kilograms of food grain/person when a below poverty line (BPL) household which has a Priority Household (PHH) ration card is entitled to five kilograms a person. The four kilograms of grain being issued is rice, which is the lowest quality of 'Usna' rice. No amount of wheat is issued.

Documentation that has no legal basis

Coming back to the issue of enrolment in PDS. The Government of Bihar offers its citizens the option to file a ration card application using a paper-based application form or by filling in an online application form through its e-PDS portal. The first option requires the Aadhaar details of the applicant and their family members. The second option requires an extra set of documents, namely caste certificate, income certificate, and residence certificate. Even when the applicant uses the first method, the officials eventually demand these certificates.

The demand for such documents is not exclusive to Bihar. Jharkhand also makes such a demand while Uttar Pradesh makes it mandatory to provide an income certificate, and Madhya Pradesh requires the submission of proof of residence.

The requirements of these certificates do not have any legal basis. Neither the National Food Security Act (NFSA) of 2013 nor the PDS control order of 2015 explicate the requirement of such documents. An officer from the Food and Consumer Protection Department in Bihar has confirmed that the requirement of those certificates is an oversight in the online system. Here again we see that in the race towards

digitisation and e-governance, governments have shed all and any conception of governance and citizen welfare.

The issue of exploitation

It is notable, and most unfortunate, that the government, which has complete awareness of its systemic flaws, has made no attempt at systemic change and that people continue to be crushed under the weight of official indifference. To make matters worse, this hubris of power has provided the perfect conditions for the creation of a market of exploitation.

Most of the people, especially in the Musahar community, who seek to avail the benefits of PDS, neither have the resources nor the knowledge to interact with online processes. This situation has been aggressively exploited by middlemen who charge a sum that is north of ₹3,000 to have a ration card made. Within this market of exploitation, it is not uncommon to hear that neither document was issued nor the middleman traceable after payment.

Amidst the myriad challenges, if the people are somehow able to file their application, there is still no guarantee that they will get their ration card. While the 2015 order states that ration card should be issued within 30 days of the application being filled, there are cases of people whose applications have been pending for long – between four to 18 months. These applications are not for an entitlement which goes above and beyond the diurnal needs of a person. They are for the basic means of subsistence. It has been 24 years since the right to food was recognised as a fundamental right in the case, *People's Union of Civil Liberties vs Union of India*. Since then, governments have wound bureaucratic red tape around it so tightly that it is choking the very people it was meant for.



The Right to Food Crisis in Jharkhand, Odisha, and Bihar



Topic → The Right to Food Crisis in Jharkhand, Odisha, and Bihar

Introduction to the Right to Food

In 2023, the right to food has become a hot topic, especially in the context of states like Jharkhand, Odisha, and Bihar. These regions have been grappling with alarming reports that reveal a significant number of households being removed from the Public Distribution System (PDS). This situation raises serious concerns about food security and the welfare of marginalized communities.

The Alarming Reports of 2023

Jharkhand's PDS Issues

Jharkhand has been in the spotlight for its troubling PDS issues. Reports indicate that many families have been unjustly removed from the system, leaving them without access to essential food supplies. This is not just a bureaucratic oversight; it's a matter of survival for many.

Odisha's PDS Challenges

Similarly, Odisha is facing its own set of challenges. The reports from this state echo the same alarming trend, where households are being cut off from the PDS rolls. The implications of this are dire, as families struggle to secure their daily meals.

Bihar's PDS Tragedy

Bihar, another state in the east-central region, is not exempt from this crisis. The situation here is particularly dire, especially for the Musahar community, which has been severely affected by the socio-political dynamics of caste and poverty.

Spotlight on the Musahar Community

The Impact of COVID-19 on Ration Supply

The COVID-19 pandemic exacerbated the existing supply crisis in Bihar. During a time when rations were desperately needed, many households found themselves without the necessary support. The Musahar community, already marginalized, faced even greater challenges in accessing food.

The Struggles of the Musahar Community

Many Musahar households in Patna district lack active ration cards. Even those who do have cards often find that not all family members are listed, complicating their access to food supplies. This community's struggle with the PDS is a significant symptom of broader systemic issues.

Problems with the Public Distribution System (PDS)

Enrollment and Access Issues

The PDS is riddled with problems, starting with enrollment. Many individuals face hurdles when trying to register for a ration card. The introduction of biometric verification has only added to the confusion, with many names being struck off the PDS rolls.

Biometric Verification Challenges

The mandatory biometric verification at fair price shops (FPS) has left many without access to their monthly rations. This has forced individuals to apply for new ration cards, further complicating an already difficult situation.

Corruption in the PDS System

Corruption is another significant issue plaguing the PDS. Reports indicate that FPS dealers often provide less than the entitled amount of food grains. For instance, households that should receive five kilograms per person are only getting four kilograms of low-quality rice, with no wheat being issued at all.

Documentation Requirements and Their Implications

Legal Basis for Documentation

The government of Bihar requires various documents for ration card applications, including Aadhaar, caste, income, and residence certificates. However, these requirements lack a legal basis, as neither the National Food Security Act (NFSA) of 2013 nor the PDS control order of 2015 mandates such documentation.

The Burden of Bureaucracy

This bureaucratic red tape creates unnecessary barriers for those in need. Even when individuals manage to submit their applications, there's no guarantee they will receive their ration cards in a timely manner. Some applications have been pending for months, leaving families in a precarious situation.

The Exploitation of Marginalized Communities

The Role of Middlemen

The exploitation of marginalized communities, particularly the Musahars, is a tragic reality. Many individuals lack the resources or knowledge to navigate the online application processes, making them vulnerable to middlemen who charge exorbitant fees for assistance.

The Long Wait for Ration Cards

Even after overcoming the hurdles of application, there's no assurance of receiving a ration card. The 2015 order stipulates that cards should be issued within 30 days, yet many applicants wait for four to 18 months. This delay is not just an inconvenience; it's a matter of survival.

Conclusion

The right to food is a fundamental human right, yet the current state of the PDS in Jharkhand, Odisha, and Bihar reveals a troubling disconnect between the government and the communities it is meant to serve.

The systemic flaws, bureaucratic hurdles, and rampant corruption create a perfect storm of exploitation and deprivation. It's high time for a comprehensive overhaul of the PDS to ensure that every individual has access to the food they need to survive.

China's long game in Africa

In 2022, when China established its first political training school in Tanzania, the Mwalimu Julius Nyerere Leadership School, its motivation was unambiguous. With an estimated cost of \$40 million, the school was a tool for the Chinese Communist Party (CCP) to shape the future political leaders of Africa following the Chinese principles of governance.

Therefore, it is no surprise that the 120 official members of the school's first cohort were from countries with long-standing historical ties to China. These countries continue to be ruled by the liberation parties that came into power through their pre-independence struggles. The countries include South Africa, Mozambique, Angola, Namibia, Zimbabwe, and Tanzania. In fact, these six countries, along with Botswana, are also part of the Former Liberation Movements of Southern Africa, an informal coalition meant to help one another address governance challenges and stay in power.

Clearly, the move by China to establish the political school is meant to strengthen its relationship and increase its influence among the policymakers of these countries. The political school is another platform for the leaders of these ruling liberation parties to enhance their governance capabilities through shared educational resources. This is also an example of China's broader strategy to shape Africa's political landscape by promoting its governance model based on the centrality of the ruling party and its control over the state.

Game of influence

There are several ways for a country to assert its influence. One way could be mediation or fostering dialogue among the concerned parties to facilitate positive conversations. This also helps in building a strong global image for the mediator country. Historically, the U.S. has been the most influential international



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China's long game in Africa is not just about economic influence or military strength. It is also about the subtle art of diplomacy and influence

mediator. However, China is increasingly asserting itself in this role, as seen in its involvement in resolving the Saudi Arabia-Iran and Niger-Benin disputes.

As China seeks to establish an alternative world order – often complementary to, and sometimes in contrast with, the Western-led global system – it recognises the importance of Africa's support in various multilateral forums. Africa, with 55 countries, is a significant player in international relations. And so, Beijing is intensifying its efforts to build strong ties with Africa as part of its broader strategy to shift the global balance in its favour.

However, China's engagement in Africa's politics is not a recent phenomenon. Beijing has supported African independence movements, military endeavours, and governance structures. It has also helped develop African economies through investments in infrastructure and industrial projects. This historical relationship continues to be strong, as China intensifies its focus on strengthening ties with Africa's ruling parties.

'Study tours' have remained a key part of China's public diplomacy with Africa. Every year, hundreds of African officials visit China for lectures at universities, visits to provincial governments, and cultural exchanges designed to familiarise them with Chinese traditions and governance practices.

Only now has China's game plan to influence African political elites expanded through the introduction of political schools. During the 8th Forum on China-Africa Cooperation in 2021, China acknowledged its ties to over 100 political parties across 51 African countries.

China's growing influence in Africa is evident not only in the establishment of new educational institutions but also in the deepening of its political relationships. Kenya, for example, has expressed its interest in having a leadership school that would be

financed by and modelled on the CCP's Central Party School. These efforts are accompanied by investments in infrastructure. China funded the construction of Kenya's new foreign ministry headquarters, as the two countries were celebrating 60 years of diplomatic relations.

China is not only constructing new institutions, but also refurbishing many existing ones. For instance, China funded the renovation of the Herbert Chitepo School of Ideology in Zimbabwe. Through such initiatives, it aims to establish a governance model similar to its own, based on strong, centralised party systems that offer stability and control. This highlights the effectiveness of building reciprocal relationships, particularly in countries where leadership stability and centralisation are highly valued.

Chinese diplomacy in Africa

China's approach to Africa is built on decades of patient diplomacy. While the Nyerere Leadership School represents a significant milestone, it is only one piece of China's broader strategy to embed itself deeply within Africa's political fabric. China's long-term goal is to promote a Sino-centric world order in which it plays a central role in shaping global governance structures.

However, China is also mindful of potential regime changes in Africa. It knows the importance of nurturing opposition parties to safeguard its interests in case political shifts occur. By establishing political schools and cultivating bonds with ruling and opposition parties, China is ensuring that its influence is intact regardless of political transitions.

China's long game in Africa is not just about economic influence or military strength. It is also about the subtle art of diplomacy and influence. Through its strategic investments in Africa's political future, China is ensuring that it remains a key player in shaping Africa's governance structures for years to come.

The Rise of China's Political Influence in Africa

Mwalimu Julius Nyerere Leadership School 1

- Strategic move by CCP 1
- \$40 million investment 1
- Train African leaders 1

Purpose and Goals 2

- Cultivate pro-China leaders 2
- Enhance political clout 2
- Historical ties with Africa 2

First Cohort and Liberation Parties 3

- 120 members from 6 countries 3
- Role of ruling parties 3
- Broader strategy in Africa 3

Educational Resources 4

- Governance capabilities 4
- Network of supportive leaders 4

Influence Strategies 4

- Mediation and dialogue 4
- Growing role in mediation 4

Historical Engagement 5

- Support for independence 5
- Infrastructure investments 5
- Expansion of political schools 5

Public Diplomacy and Political Ties 5

- Study tours 5
- Ties with 100 parties 5

Future Influence and Relationships 6

- Reciprocal relationships 6
- Nurturing opposition parties 6
- Long-term strategy 6

Topic → The Rise of China's Political Influence in Africa

In recent years, China's influence in Africa has been on the rise, and a significant milestone in this journey was the establishment of the Mwalimu Julius Nyerere Leadership School in Tanzania in 2022. This political training school is not just an educational institution; it is a strategic move by the Chinese Communist Party (CCP) to shape the future political leaders of Africa according to Chinese governance principles.

H2: Introduction to the Mwalimu Julius Nyerere Leadership School

The Mwalimu Julius Nyerere Leadership School represents a bold step in China's efforts to solidify its influence in Africa. With an estimated cost of \$40 million, this school is designed to train political leaders from various African nations, emphasizing the importance of governance aligned with Chinese ideals.

The Purpose Behind the School's Establishment

The primary motivation behind the establishment of this school is clear: to cultivate a new generation of African leaders who are sympathetic to Chinese governance models. By doing so, China aims to create a network of allies who can help promote its interests across the continent.

Financial Investment and Strategic Goals

The \$40 million investment is not just about education; it is a calculated move to enhance China's political clout in Africa. By investing in leadership training, China is ensuring that its principles of governance are disseminated among the future decision-makers of the continent.

Historical Ties Between China and African Nations

China's relationship with Africa is not a new phenomenon. Over the years, China has built strong ties with several African nations, particularly those with historical connections to liberation movements.

Countries Involved in the First Cohort

The first cohort of the Mwalimu Julius Nyerere Leadership School included 120 official members from countries like South Africa, Mozambique, Angola, Namibia, Zimbabwe, and Tanzania. These nations share a common history of liberation struggles and have maintained close ties with China.

The Role of Liberation Parties

The ruling liberation parties in these countries have played a crucial role in maintaining these ties. By aligning with these parties, China is ensuring that its influence remains strong in regions where governance is often centralized and party-driven.

China's Broader Strategy in Africa

The establishment of the leadership school is just one part of China's broader strategy to enhance its influence in Africa. By strengthening relationships with policymakers, China aims to create a favorable political environment for its interests.

Strengthening Relationships with Policymakers

The political school serves as a platform for leaders of ruling liberation parties to enhance their governance capabilities. This shared educational resource fosters a sense of loyalty and alignment with Chinese principles.

Educational Resources and Governance Capabilities

By providing educational resources, China is not only enhancing governance capabilities but also ensuring that African leaders are well-versed in Chinese political ideologies. This creates a network of leaders who are more likely to support China's initiatives.

The Game of Influence

Influence can be exerted in various ways, and China is adept at using multiple strategies to assert its presence in Africa.

Mediation and Dialogue as Tools for Influence

One effective method is through mediation and fostering dialogue among nations. This approach not only builds a positive global image for China but also positions it as a key player in international relations.

China's Growing Role in International Mediation

Historically, the U.S. has been the dominant mediator in international conflicts, but China is increasingly stepping into this role, as seen in its involvement in resolving disputes like those between Saudi Arabia and Iran.

Long-standing Engagement in African Politics

China's engagement in African politics has deep roots, dating back to its support for independence movements and military endeavors.

Support for Independence Movements

China has a long history of supporting African nations in their struggles for independence, which has fostered goodwill and strengthened ties.

Investments in Infrastructure and Economy

Beyond political support, China has invested heavily in African infrastructure and industrial projects, further solidifying its role as a key partner in development.

The Expansion of Political Schools

The introduction of political schools marks a new phase in China's strategy to influence African political elites.

The Role of Study Tours in Public Diplomacy

Study tours have been a cornerstone of China's public diplomacy, allowing African officials to visit China for lectures and cultural exchanges. This exposure helps familiarize them with Chinese governance practices.

Acknowledgment of Political Ties

During the 8th Forum on China-Africa Cooperation in 2021, China acknowledged its ties to over 100 political parties across 51 African countries, highlighting its extensive network of influence.

The Future of Chinese Influence in Africa

Looking ahead, China's influence in Africa is likely to grow as it continues to build reciprocal relationships with both ruling and opposition parties.

Building Reciprocal Relationships

By nurturing relationships with opposition parties, China is safeguarding its interests in case of political shifts, ensuring that its influence remains intact regardless of changes in leadership.

Nurturing Opposition Parties

This strategic approach allows China to maintain a foothold in African politics, regardless of which party is in power.

: Conclusion

In conclusion, the establishment of the Mwalimu Julius Nyerere Leadership School is a significant step in China's long-term strategy to embed itself within Africa's political landscape. By investing in education and fostering relationships with political leaders, China is positioning itself as a key player in shaping Africa's governance structures for years to come.

Why is deciphering the Indus script important?

Why has Tamil Nadu Chief Minister M.K. Stalin announced a \$1-million prize to anyone who deciphers the scripts of the Indus Valley Civilisation? Has any work in recent times pointed to the possible cultural contact between the Indus Valley and south India?

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The story so far:

On January 5, Tamil Nadu Chief Minister M.K. Stalin announced a \$1-million prize for experts or organisations in the event of their success in deciphering the scripts of the Indus Valley Civilisation (IVC). He made the announcement at the inauguration of an international conference to mark the centenary of the IVC discovery, which was disclosed through an article published in September 1924 by the then Director General of the Archaeological Survey of India (ASI) John Marshall. That the Chief Minister of a southern State in the country had made such an announcement was due to the possible Dravidian connection with the IVC. Notwithstanding the political dimension of the Dravidian concept, historians, archaeologists and linguistic scholars have been debating over the Dravidian hypothesis ever since the publication of Marshall's article.

How do scholars define the Indus Valley Civilisation (IVC)?

The IVC, also called the Harappan Civilisation, spanned 2,000 sites across 1.5 million sq. km. in the territories of modern-day India, Pakistan, and Afghanistan during the Bronze Age (3000-1500 BCE). It had a wider geographical area than the combined areas of its contemporary civilisations – Egyptian and Mesopotamian. Talking of the IVC's importance, Pakistan's veteran archaeologist Ahmad Hasan Dani, in the December 1973 issue of *UNESCO Courier*, observed that the Valley lies across "ancient migration routes from central and western Asia to India." The IVC introduced urban life for the first time in the valley when similar civilisations had developed on the banks of the Nile and the Tigris-Euphrates valleys.

Why is deciphering the Indus script important?

Other scripts encountered in the contemporary Mesopotamian and Egyptian civilisations had been deciphered in a more satisfying manner. But, the non-decipherment of the Indus script prevents scholars from providing a complete picture of Harappan culture, which is why scholars tend to call it a "mystery script."

What is the Dravidian hypothesis?

The Indus script carries proto-Dravidian references – this is the position of scholars including Suniti Kumar Chatterji, Father Heras, Yri Valentimovich Kozlovsky, Walter Fairervis, Travathan Mahadevan, Kamal Zvebil, Krishnamurti and Asko Parpola – which can be found in the latest study on Indus signs and graffiti marks of Tamil Nadu.

The IVC "is non-Aryan and pre-Aryan," argued Mahadevan in his article published in *The Hindu* on May 3, 2009. Attributing "solid archaeological and linguistic evidence," the scholar, who passed away in 2016, emphasised that "the Indus script is a writing system encoding the language of the region (most probably Dravidian)." Ruling out Aryan authorship of the civilisation, he hastened to add that it does not automatically make it Dravidian. Yet, "there is substantial linguistic evidence favouring the Dravidian theory: the survival of Brahui, a Dravidian language in the Indus region; the presence of Dravidian



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Buried secrets: Different structures are exposed in a trench at Rakghighri, a Harappan site in Haryana, in 2022. SHRI KUMAR PUSHPAKA

loanwords in the Rigveda; the substratum influence of Dravidian on the Prakrit dialects; and computer analysis of the Indus texts revealing that the language had only suffixes (like Dravidian), and no prefixes (as in Indo-Aryan) or inflections (as in Munda)," Mahadevan wrote. As the Dravidian models of decipherment had still little in common except certain basic features, "it is obvious that much more work remains to be done before a generally acceptable solution emerges," according to him.

What does the latest work have to offer?

Commissioned by the Tamil Nadu government's State Department of Archaeology (TNSDA), the study, which is morphological in nature, reveals that nearly 90% of the graffiti marks found during excavations at archaeological sites in the State have parallels to those found in the Indus Valley Civilisation. "...the exact shapes and their variants found both independently and in composite forms vividly indicate that they were not accidental. It is believed that the Indus script or signs would have not disappeared without any trace[s], rather they would have transformed or evolved into different forms," concludes K. Rajan, formerly professor with Pondicherry University and academic research advisor to the TNSDA, and R. Sivanandham, joint director in the department, who carried out the study.

Defining the terms "graffiti" and "script," the duo, in a monograph, explain that all the recognisable scratches engraved on the ceramics in south India and, to some extent, on Indus ceramic

are identified as graffiti. The ones engraved on seals and other metal objects of the IVC are designated as script. Even though both were written by the same people, they were differentiated and documented as script and graffiti. "However, the extensive comparative study of graffiti marks and Indus scripts evidently suggests that both are undeciphered signs," the two scholars observe.

Which project has preceded the work?

The findings of a two-year-long project of the TNSDA, called 'Documentation and Digitisation of Graffiti and Tamili (Tamil-Brahmi) Inscribed Potsherds of Tamil Nadu', have formed the basis of the monograph.

Aimed at documenting, compiling and analysing the graffiti bearing potsherds and Tamili inscribed potsherds unearthed in archaeological excavations of the State, the project, launched during 2022-23, seeks to compare those graffiti marks with the Indus script to explore whether any cultural relationship existed between the two.

The datasets from the project suggested that 15,184 graffiti-bearing potsherds were reported from 140 sites in the State and nearly 14,167 sherds were documented. Of them, nearly 2,107 signs had been morphologically categorised within a group of 42 base signs, 344 variants and 1,521 composites. Any additional strokes added to the base signs were considered variants of the base signs while a group of signs containing more than one base sign was regarded as a composite sign. "Several signs

encountered in Tamil Nadu had exact parallels in the Indus scripts. Likewise, some signs had near parallels. These signs probably evolved from the base signs. Out of 42 base signs and their variants, nearly 60% of them found their parallels in the Indus script," the document explains.

How has the question of cultural contact between the IVC and south India been explored by the work?

The monograph talks of a "possibility of cultural exchanges." Even though the occurrences of identical graffiti marks in south India suggest a kind of cultural contact, one needs more material evidence and tangible data to support or strengthen the view.

The recent chronometric dates indicate that when the Indus Valley experienced the Copper Age, south India experienced the Iron Age. "In this sense, the Iron Age of South [sic] India and the Copper Age of Indus are contemporary." If that is so, there is a "possibility of cultural exchanges either through direct or intermediate zones," the authors of the monograph point out.

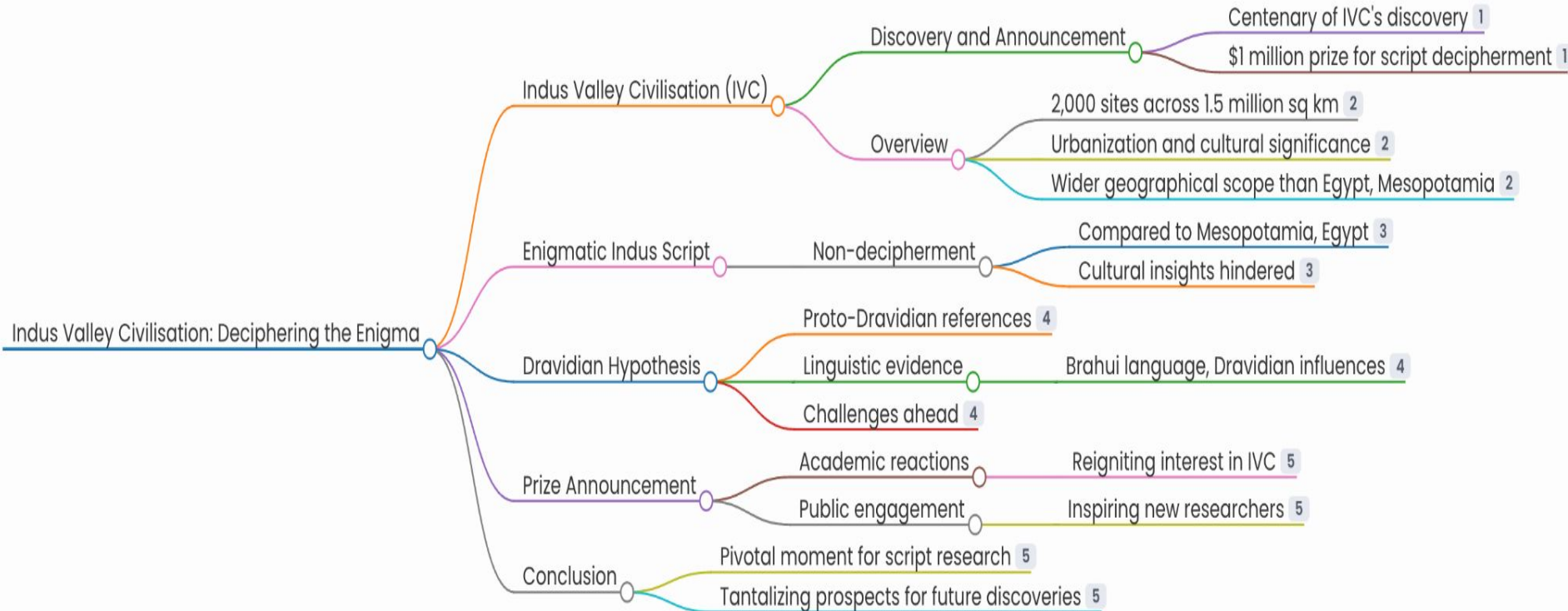
The document goes on to state that the occurrence of a large number of carnelian and agate beads and high-tin bronze objects, particularly from Iron Age graves, give a clue about the contact, as carnelian, agate, copper and tin have to come from the north or elsewhere. Besides semiprecious stones and copper, a few more cultural items are required to prove the existence of contact "convincingly," the authors state, calling for future explorations, excavations, scientific investigations and historical

THE GIST

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Topic → The Indus Valley Civilisation:

On January 5, 2025, a groundbreaking announcement reverberated across academic circles when Tamil Nadu Chief Minister M.K. Stalin unveiled a \$1 million prize aimed at experts or organizations that can successfully decipher the cryptic scripts of the Indus Valley Civilisation (IVC) 🌐.

This declaration was made during an international conference commemorating the centenary of the IVC's discovery, first reported in 1924 by John Marshall, then Director-General of the Archaeological Survey of India (ASI).

The connection between the Dravidian culture and the IVC has long intrigued historians, linguists, and archaeologists, making this challenge all the more compelling.

The Indus Valley Civilisation: An Overview

The IVC, also known as the Harappan Civilisation, is a fascinating tapestry woven across 2,000 sites spanning 1.5 million square kilometers in what is now India, Pakistan, and Afghanistan during the Bronze Age (3000-1500 BCE) 🏺. Here's why it stands out:


Wider Geographical Scope: The IVC's geographical reach eclipses that of its contemporary civilizations, such as Egypt and Mesopotamia.

Urbanization: It heralded the dawn of urban life in the region, concurrent with developments in other ancient cultures.

Cultural Significance: According to Ahmad Hasan Dani, a noted Pakistani archaeologist, the IVC was strategically located along ancient migration routes from central and western Asia to India, enhancing its cultural relevance.

The Enigmatic Indus Script

Despite numerous attempts, the Indus script remains an unsolved enigma. Scholars have labeled it a "mystery script" due to its undeciphered nature:

Non-decipherment: Other scripts from Mesopotamia and Egypt have been successfully translated, but the Indus script continues to confound researchers .

Cultural Insights: The inability to decode the script hampers a complete understanding of Harappan culture, leaving scholars thirsting for knowledge.

The Dravidian Hypothesis

At the crux of the deciphering challenge lies the Dravidian hypothesis, positing that the Indus script may contain proto-Dravidian references. This hypothesis is championed by several eminent scholars, including Suniti Kumar Chatterji and Iravatham Mahadevan.

Key points include:

Linguistic Evidence: Mahadevan contends that the script encodes a language likely rooted in the Dravidian family. He cites substantial linguistic evidence, including the survival of the Brahui language in the Indus region and Dravidian influences on the Prakrit dialects.

Challenges Ahead: Despite the promising theories, Mahadevan notes that much work remains before a universally accepted solution can be reached.

The Prize Announcement: Implications and Reactions

The announcement of the \$1 million prize has sparked a fervor of excitement and debate across academic and public spheres:

Academic Reactions: Scholars are invigorated by the challenge, viewing it as an opportunity to reignite interest in the IVC and its script.

Public Engagement: The allure of a significant monetary reward has captured the public's imagination, potentially inspiring new generations of researchers to delve into ancient scripts.

Conclusion

The quest to decipher the Indus Valley script stands at a pivotal moment, buoyed by the promise of a substantial prize and renewed scholarly interest. As we embark on this journey to unlock the secrets of one of history's most enigmatic civilizations, the future of Indus script research holds tantalizing prospects, awaiting the brilliance of those daring enough to take on this challenge.

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Topic → Nimrud: An Ancient Assyrian City




Overview of Nimrud


-  Nimrud is an ancient city located in modern-day Iraq.
-  Established in the 13th century BC, it was a major cultural and political hub.
-  Known for its archaeological remains, including palaces, temples, and monumental sculptures.
-  Served as the capital of the Assyrian Empire under King Ashurnasirpal II.
-  Extensive archaeological excavations have provided insights into Assyrian civilization.
-  Designated a UNESCO World Heritage Site in 2014, emphasizing its cultural importance.
-  Suffered destruction due to conflicts and looting, especially during the rise of ISIS.


Summary: Nimrud is a historically significant city in Iraq, renowned for its archaeological and cultural heritage, yet has faced recent destruction

The Assyrian Empire





 The Assyrian Empire was one of the ancient Mesopotamian civilizations, known for its powerful military and advanced culture.


 It existed from approximately 2500 BC until 605 BC, reaching its peak during the 9th to 7th centuries BC.

 The empire covered parts of modern-day Iraq, Syria, Turkey, and Iran, making it one of the largest empires of its time.

 The Assyrians were known for their brutal military tactics and extensive use of siege warfare.

 They built impressive architectural structures, including palaces and temples, showcasing their advanced engineering skills.

 The Assyrian Empire contributed significantly to literature, science, and art, preserving knowledge through cuneiform writing.

 The empire eventually fell due to a combination of internal strife and external pressures from neighboring civilizations.

Summary: The Assyrian Empire was a dominant ancient civilization known for its military prowess, cultural achievements, and vast territorial expanse.

Q. The mission for Compact Research Module for Orbital Plant Studies has recently been launched by which among the following Space agency. (IE)

A) European Space Agency. (ESA)

**B) National Aeronautics and Space
Administration (NASA)**

**C) China National Space
Administration (CNSA)**

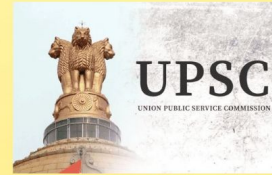
**D) Indian Space and Research
Organisation (ISRO)**

Ans: D

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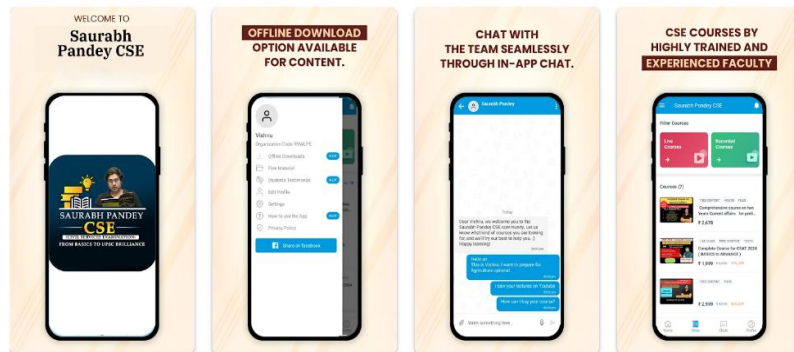
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