

#THE RIVER CODE

Cracking Earth's Waterways with GRIT



In a world grappling with climate change, rising sea levels, and unpredictable weather events, understanding how water moves across the planet is no longer a luxury, it's a necessity. Now, a team of scientists has unveiled what they call the most complete map of the world's rivers ever created, a powerful new tool that could



Why GRIT is a Game-Changer

For decades, scientists and policymakers have relied on outdated or incomplete data to study river systems. Many global river maps were stitched together from national datasets, each with its own format, assumptions, and blind spots. The result? A fragmented understanding of how water travels from mountaintop to ocean, leaving crucial gaps in flood models, irrigation planning, and environ-

How it Works

GRIT doesn't just show rivers as lines on a map. It reconstructs their geometry, including the direction of flow, branching patterns, and how they intersect with landforms. It reveals where rivers split, meander, or join other water bodies. This level of detail helps experts track water flow more accurately, anticipate blockages, and even understand how floods propagate through

Real-World Impact

The implications of GRIT are vast and global. In urban planning, it can inform smarter construction decisions and prevent costly damage by avoiding flood-prone zones. In agriculture, it supports better irrigation strategies and water distribution. For climate scientists, it's a vital tool in modeling how global warming may alter river dynamics

Looking Ahead

As the planet warms and water becomes an increasingly volatile resource, tools like GRIT offer hope. By understanding rivers not just as geographical features but



The Kargil War lasted for more than two months, and India conducted Operation Vijay in a most methodical and professional manner to attack and recapture the enemy-held heights. The operation was a unique display of bravery, resolve, and commitment under inhospitable conditions of terrain and weather.



Operation Safed Sagar

● Gaurav Kumar

During 1998-1999, Pakistan Army had surreptitiously inducted its troops in disguise to the Indian side of the LoC to occupy commanding positions. It had ingressed into Kargil District with multiple aims, to internationalize the Kashmir issue, challenge the sanctity of the LoC, and most importantly to renew and sharpen the Pakistan-organized events in the Kashmir region. This was made under assumption that they would be able to wrestle some concession from India on the issue of Kashmir. The Kargil war of 1999 was fought between Indian forces and Pakistani Army in the high-altitude mountains, with jagged, near vertical hill faces, which posed both tactical and logistical problems.

The Kargil War lasted for more than two months, and India conducted Operation Vijay in a most methodical and professional manner to attack and recapture the enemy-held heights. The operation was a unique display of bravery, resolve, and commitment under inhospitable conditions of terrain and weather.

The role of Indian Air Force in this critical operation on the high altitude mountains was rightly perceived by both the political and military policy makers, however, with its share of constraints and challenges. Air Vice Marshal (Dr) Arjun Subramaniam (Retd) writes, "The IAF fought in an 'unconventional' manner in terms of the political constraints imposed on it in the form of stringent Rules of Engagement and terrain imperatives that had never been encountered before, and their associated impact on target- ing. High altitude operations always come with challenges like severe degradation of aircraft and weapon performance."

Totally unfamiliar surround-



ings in the Kargil area made target recognition difficult from the ground, let alone from a fast moving aircraft. As a result, the initial few sorties from high levels were not effective as desired. However, once revised and modified profiles, tactics and manner of system usage had been perfected, the accuracy of the airstrikes improved dramatically.

The Western Air Command was given the responsibility to conduct operations during the Kargil War. The task assigned to the Indian Air Force was not to use air power, as an extended artillery, but only in assistance to the Indian Army. The primary task of the use of air power was to degrade the offensive capabilities of the intruders by targeting their gun positions, bunkers, defences on mountain tops, destroy their supply lines, supply camps, and distribution centres.



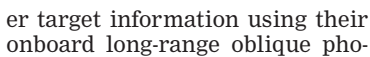
The Western Air Command was given the responsibility to conduct operations during the Kargil War. The task assigned to the Indian Air Force was not to use air power, as an extended artillery, but only in assistance to the Indian Army. The primary task of the use of air power was to degrade the offensive capabilities of the intruders by targeting their gun positions...

PRELUDE TO AIR OPERATION

Indian Army had on 08 May, 1999 projected the deployment of the Indian Air Force, the operations commenced on 26 May, 1999. The approval came with a limitation that the IAF would not cross the Line of Control (LoC). Air Vice Marshal (Dr) Arjun Subramaniam (Retd) writes, "Although, the IAF was not deployed during the initial phase of Operation Vijay, it had not only alerted its fighter Squadrons, but some aircraft were moved to the Valley for the impending operations. IAF also commenced a large-scale airlift of troops, ammunition and stores into the Sector. It also commenced aerial reconnaissance-and-strike familiarisation. The rapid mobilisation ensured that the IAF was ready for undertaking wide-ranging full-scale military operations by the morning of 15 May."

The IAF began conducting initial reconnaissance sorties over the Kargil heights as early as 10 May, 1999, less than a week after the presence of the enemy incursion was first confirmed. On 12 May, an IAF Helicopter was fired upon near the most forward-based Pakistani positions overlooking Kargil and landed uneventfully with a damaged rotor. In the next few days, IAF Jaguar fighters conducted Tactical Reconnaissance sorties in the Kargil area to gath-

#KARGIL



Legendary Air Commodore Jasjit Singh in his book, *Kargil 1999: Pakistan's Fourth War for Kashmir* concludes, "If India can beat a professional military force equipped with modern firepower, on the ground and at a time of Pakistan's choice, with the initiative also in its hands, with strategic and tactical surprise almost complete, then, India can beat Pakistan anytime, anywhere."

Ajay Ahuja was awarded Vir Chakra Posthumously for displaying exceptional courage in going beyond the call of duty while searching for a downed brother officer. On 28 May, 1999 Nubra formation, 4 x Mi-17, were tasked to strike 'Point 5140' feature, located two kms North of Tololing. Nubra formation took off in time and all went on perfectly well. However, Flight Lieutenant Subramaniam Muhlan was flying the Nubra-3 formation which got hit by the Stinger Missile. Despite Flight Lieutenant Muhlan's best effort to control the damaged helicopter, it crashed killing him and all his crew members. He was awarded Vayu Sena Medal Posthumously.

Wing Commander (later Air Commodore) Anil Kumar Sinha was the leader of the four aircraft formation. The rocket attack launched by the formation, despite the loss of the helicopter, was successful and inflicted heavy casualties on the enemy. Wing Commander Anil Kumar Sinha was awarded with the Vir Chakra.

It was the air strikes conducted by the Indian Air Force on some of the key locations, that dramatically altered the equation in favour of India. The most prominent among them is the strike on the Muntho Dhalo. The Pakistani had built a supply camp in a bowl-shaped valley at Muntho. Over the days, it

World Brother's Day: Celebrating the Bond of Brotherhood

Observed on May 24, World Brother's Day honours the special relationship shared between brothers, by blood or by bond. It's a day to appreciate the unwavering support, camaraderie, and lifelong memories that brothers bring into our lives. Whether it's a childhood partner-in-crime, a protective older sibling, or a brother-like friend, this day encourages us to express gratitude for their presence. Families and friends mark the occasion with heartfelt messages, calls, and small gestures of love. In a fast-paced world, World Brother's Day reminds us to cherish the often-understated yet powerful connection of brotherhood.



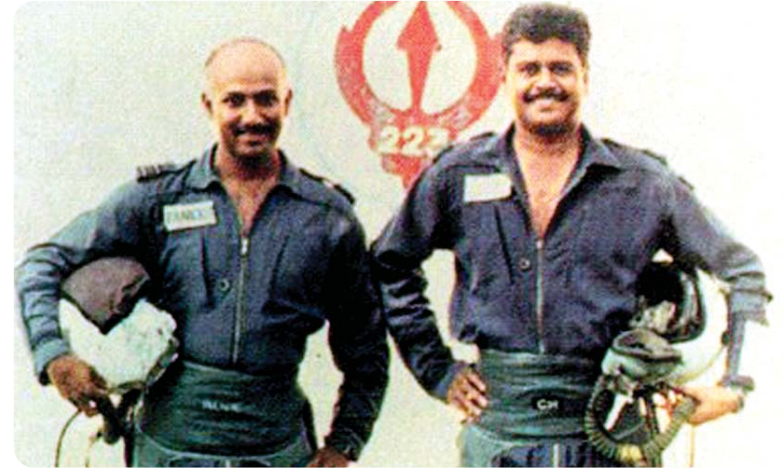
grew up into a major supply depot. The strike of 16 June and 17 June by MiG-27s and Mirage-2000s were devastating and later attacks in the area ensured destruction of fresh Pakistani attempts to reuse the base. Each airstrike at the end was result of a carefully planned chain of events spanning several areas of specialisation. An airstrike had following components: -

- (a) Recce mission(s).
- (b) Airstrike mission(s).
- (c) Battle Damage Assessment (BDA) mission(s).
- (d) If so dictated by results of BDA, or by follow-up recce, repeated airstrikes.

As a result of these attacks, severe damage to enemy personnel and equipment became apparent in various areas. Any time the target was spotted, a very high success rate invariably resulted.

On 24 June, the IAF used LGBs to decimate the enemy on Tiger Hill. The IAF continued to mount

search and destroy missions when on 05 July, a large Nissan hut in the Tiger Hill area was destroyed. Two days later, on 07 July, the IAF struck a logistics camp in the same area. Earlier, despite bad weather, restricting flying, on 03 June, three enemy camps were destroyed. With Indian troops in very close proximity to the enemy, air attacks had to be carefully executed or on occasions even called off till a confirmation was received from the army that Indian troops were out of harm's way. On 08 June, the IAF engaged targets in the Mushkoh Valley where the Pakistan Army had many storage dumps and bunkers.



rajeshsharma1049@gmail.com

#FOOD-TALK

Good Morning, Healthy Heart!

Desi Breakfast Delights That Love Your Heart Back!

They say breakfast is the most important meal of the day, but what if it could also be the most heart-loving? With India's rich culinary diversity and growing health awareness, it's easier than ever to whip up a morning meal that doesn't just satisfy your taste buds but also gives your heart a warm hug. Whether you're juggling Zoom calls, school runs, or simply trying to start your day on a healthy note, here's a guide to heart-friendly Indian breakfast options that are high on taste, low on guilt, and great for the ticker.



1. The South Indian Heartthrobs: Idli, Dosa & Co.

Light, fluffy, and fermented, idlis are every cardiologist's dream. Made from urad dal and rice, these steamed delights are low in fat, rich in complex carbs. Their fermentation process adds a bonus of gut-friendly probiotics. Pair them with coconut chutney (go easy on the oil) and sambar (packed with

veggies and lentils), and you've got a fiber-rich, antioxidant-loaded meal. Want something crispier? Opt for dosa made with a similar batter, but try making it with less oil or ghee. You can even experiment with oats or ragi dosa, millet-based versions that are kind to both your heart and your waistline.

2. Poha with a Pulse

Poha is a breakfast classic in many Indian households, but did you know this humble dish is also heart-smart? Made from flattened rice, it's light, easy to digest, and when tossed with veggies, mustard seeds, and a sprinkle of peanuts, it becomes a great

source of good fats and dietary fiber. To elevate the heart-health quotient, throw in some boiled moong sprouts or kidney beans. A handful of pomegranate seeds on top not only adds a sweet zing but also loads up on antioxidants.

3. Millet Mania: Ragi, Bajra & Jowar Bowls

The ancient grains are back in style, and with good reason. Millets like ragi, bajra, and jowar are rich in fiber, magnesium, and potassium, all of which are known to support healthy blood pressure and cholesterol levels. Whip up a warm

ragi porridge with a splash of almond milk, jaggery, and chopped fruits. Or go savory with bajra upma or jowar khichdi loaded with carrots, beans, and peas. These meals keep you full, regulate blood sugar, and are deliciously rustic.

4. Moong Dal Chilla: The Pancake Your Heart Approves

Chillas are basically Indian-style savoury pancakes, and moong dal chilla is a powerhouse. High in protein, low in fat, and brimming with fiber, it's a perfect start for those watching their

cholesterol. Grate in some carrots, cabbage, or spinach into the batter, serve it with low-fat curd, and you've got a breakfast that fuels your day while being gentle on the arteries.



5. The Smooth(ie) Operator

Who said smoothies are just a Western trend? Indianize your smoothie bowl with fruits like banana, mango, or papaya blended with oats, low-fat yogurt, and a spoonful of flax or chia seeds.

These seeds are tiny heroes, rich in omega-3 fatty acids and fiber, they're champions at reducing inflammation and improving heart health. Top your smoothie with berries, a sprinkle of crushed almonds, and maybe, a mint leaf or two for that extra flair.

6. Daliya, But Make It Delicious

Daliya (broken wheat) might have the reputation of being an old-school health food, but with a little creativity, it can become your breakfast superstar. Rich in fiber and whole grains, it's fantastic for lowering cholesterol.

Prepare a savory version with mustard seeds, curry leaves, and mixed vegetables, or go sweet with baajra upma or jowar khichdi. The bonus? It keeps you full for hours without weighing you down.

7. Tea-Time Tweaks

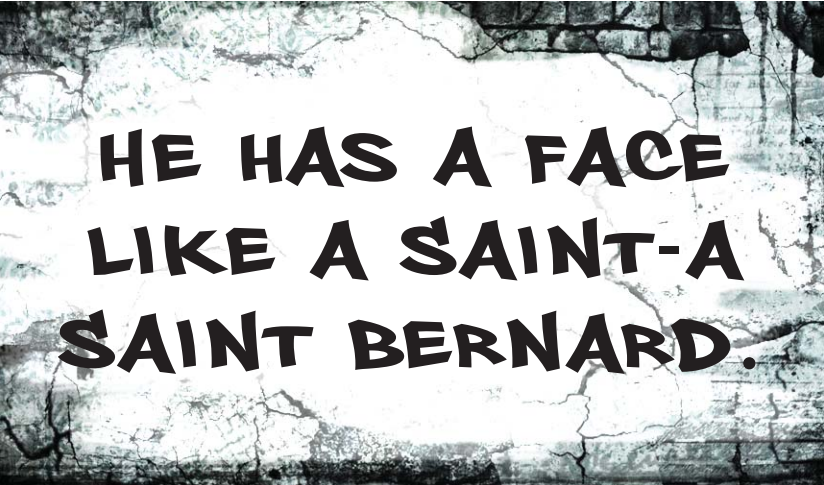
If your breakfast isn't complete without chai, switch to green tea or add tulsi leaves for a heart-soothing twist. And ditch the sugar, honey or jaggery in moderation is a better bet. Pair your tea with homemade baked snacks like oats laddoos or roasted chana instead of deep-fried samosas or kachoris. Your heart will thank you later.

In a Nutshell (Literally)

Adding a handful of nuts like almonds, walnuts, and pistachios to your morning routine can work wonders. These are rich in unsaturated fats and help lower bad cholesterol. Just don't go overboard, a closed fistful a day is plenty.



THE WALL



BABY BLUES



ZITS

