Military-Ecological Interface

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Abstract

The threats to national security have both, widened and broadened. Threats are no longer just militaries invading and conquering a country as in the past. Today threats such as ecological degradation and adverse impact of climate change are to be catered for by adaptation with resilience. Joint military doctrine recognises emerging non traditional challenges. This article traces contribution and interface by the military to ecological security. To understand contribution by the Indian military, a brief history of environmental stewardship with empirical examples of activities has been covered. The second part is about the way the United States (US) Indo-Pacific Command has institutionalised Environmental Security Forum. It achieves both, military to military cooperation and is a tool of military diplomacy. The article also recommends mechanism for addressing the present and future challenges.

"National Security not only entails Military Security but also influences our Politico – Diplomatic structure, Water, Economy, Energy, Food, Health, Education, Environment".

- Joint Doctrine of Indian Armed Forces, released by HQ Integrated Defence Staff (IDS) in August 2017, paragraph 4

Introduction

Ecological security is an emerging threat. This article makes a case for an integrated approach to ecological security by the

Services and the future of military-ecology diplomacy. HQ IDS, in the quote above, has already given the doctrinal part. Rather no other doctrine of any military known so far includes issue of environmental security. This is unique and futuristic. It is now common knowledge that environmental degradation is brought about by over-exploitative human practices or unsuitable development and climate change. In the policy cum scientific domain, the latest Inter-Governmental Panel on Climate Change report as summary for policy makers titled "Global Warming of 1.5°C"[1] has been rightly called by experts as a "wake up call"[2] as the impact of global warming would be greater than what was previously anticipated. In parallel in the academic world, *The Oxford Handbook of India's National Security* (2018) has even expanded the scope of security by including a chapter on India's Environmental Security.[3]

The military has always led from the front. There is an opportunity to further raise the level for Indian military being capable of worthwhile military-ecology diplomacy. As it is, Indian military is imbibed with green consciousness. This needs to be progressed and sustained. The article may also help in passing the baton of environmental stewardship, as a custom and tradition, to the young officers and readers and future commanders and policy makers.

In part I, the article gives a brief history of environmental and ecological ethos of the Indian military. Part II focuses on some ideas from The US Pacific Command's Environmental Security Forum. Part III is recommendations for mechanism for environmental diplomacy.

Part I: Environmental and Ecological Ethos of The Indian Military: A Brief History

Brigadier Michael Harbottle from the UK had authored a monograph, *"What is Proper Soldiering: A Study on New Perspectives for the Future Uses of the Armed Forces in the 1990s" (1991).* The monograph was inspired by the late Major General Eustace D'Souza of India who presented green practices of the Indian military to foreign militaries. In 2011, Professor

Richard Tucker, Adjunct Professor, School of Natural Resources and Environment, University of Michigan, USA recalled:

> I have been looking for, and it portrays what I see as the Indian military's outstanding record of environmental management. I have seen this in the concerns of senior officers whom I've known in Delhi and Himachal over the past thirty years. I have also recently located a 1995 article by Gen. D'Souza, outlining his work with WWF (World Wildlife Fund), CSE (Centre for Science and Environment) and Bombay Natural History Society (BNHS).[4]

To recapitulate, since the 1980s a number of Ecological Task Force (ETF) units have been raised in the Territorial Army (TA) including the one for the Ganga Action Plan in 2018. An ecological cell was raised under Quartermaster General (QMG) Branch in the early 1990s. The other services also have adhoc structures under station plans.[5] Many initiatives have been taken at local formation levels and below. Some samples of national and higher level events are elucidated in succeeding paragraphs.

The Ozone Depletion Substance (ODS) Initiative. Under Montreal Protocol, phase out, banking, and replacement of ODS, which are also global warming gases in air conditioning and fire fighting equipment (like CFC and halon), in critical equipment like aircraft and tanks was executed by the three Services under the Defence Research and Development Organisation(DRDO). A toolkit for Defence Forces on *"Ozone Protection and National Security: A Military Perspective"* was published jointly by United Nations Environmental Programme (UNEP) and Centre for Air Power Studies (CAPS). For training and implementation, officers from foreign militaries were invited to learn from the Indian experience in a workshop "Benefits of ODS Phase-out in Defence" by CAPS in November 2010. HQ Technical Group of the Corps of the Electronic and Mechanical Engineers (TG,EME), as the nodal agency conducted national seminar on "Combating Climate Change by Management of Ozone Depleting Substances in Defence Applications" in 2009 under the patronage of the Vice Chief of the Army Staff whose message is still relevant: "The Armed Forces have a significant role to play in order to stand by the Nation's commitment to Montreal Protocol and take all

possible steps to reduce / negate use of ODS. We need to focus on 'Alternatives' or 'Alternative Technologies…Sustainability and good stewardship by the present generation is the need of the hour". Later, CDs as training aids were made for units and formations for them to be aware of the twin problem of ozone protection and climate change.

Renewable Energy. In 2010, HQ IDS organised a workshop on renewable energy in defence services where issues like energy efficiency in building designs, photovoltaic technology, solar cooking, bio-fuels, wind farms, and energy from kitchen waste were deliberated upon.

Public Diplomacy. Public Diplomacy Division of the Ministry of External Affairs organised a joint panel with the United Service Institution of India in February 2010 on climate change.[6]

Waste Management in Fragile Himalayas. In 2017, a study was undertaken in north Sikkim by units and formations to study the impact on environment due to deployment with special reference to waste management which also addressed issues such as overall impact on water, soil, garbage generation, landslides, sound pollution and aesthetics; mitigation measures; and most importantly the role of the military in future.[7]

Part II: The US Pacific Command's Environmental Security Forum (PESF)

Institutional Framework

The US Army's Corps of Engineers deal with all aspects of water including building and decommissioning of dams. The Institute for Water Resources (IWR) of the US Army Corps of Engineers is the nodal agency which coordinates environmental security matters through their various military commands. Adequately funded and staffed with mostly civilian academics of varied disciplines, they coordinate their activities with the Corps of Engineers, the commands, and the diplomatic staff to engage with countries within their jurisdiction. With these resources the US Pacific Command[8] launched an Environmental Security Forum beginning 2011 in Honolulu (Hawaii) and followed it up in Indonesia (2012), Australia (2013), The Maldives (2014), Thailand (2015), and

Alaska (2017). Some of the subjects that feature in the forum include – new approaches to mitigating and adapting to climate change, environmental sustainability, water resource management, disaster preparedness, pollution, global warming, deforestation, overfishing, sustainable environmental management in military operations, lessons learned from military to support disaster relief operations, managing bio-security risks in the military context, emerging technologies, waste management, resource protection, and energy among others.

Environmental Security Forum Thailand

In 2015, I was invited in this forum to present the unique ETF model of Indian Army for other countries to learn and adopt the best practices from the Indian experiment. A total of 20 countries with over 80 delegates participated and the Indian experience was well received. Other militaries also shared their experiences at the forum; for instance, the Royal Thai Navy showcased mangrove restoration and marine environmental protection activities, being undertaken by its regular combatants.[9] The presentation from The Republic of Korea Army showed how the demilitarised zone across the 38th parallel with North Korea since the 1950s has resulted in rich biodiversity and a thriving flora, fauna, and wild life - which unfortunately also gets maimed due to old mines – an experience surely shared both by the militaries of India and Pakistan astride the Line of Control in Jammu and Kashmir.

Mangolia

In Mongolia mining has been done unsustainably. There is a realisation to resort to environmental stewardship as being done by Indian Army. In 2016, I was invited to present Indian ETF model in an International Workshop on “Bareland and Rangeland Restoration in the Gobi for Climate and Environmental Security”, at Ulaanbaatar, Mongolia. The Mongolians had shown great interest to adopt the ETF model, keeping their unique national circumstances in mind. This is indicative of the fact that the concept has received wide publicity in the world.

Part III: Recommendations for Mechanism for Environmental Diplomacy through the Military for India

It seems that many ecological traditions of the Indian military, such as the ETF, are unique. Importantly, we need to sustain this knowledge as with rapid urbanisation traditional ecological knowledge may get lost or forgotten. The Ministry of Defence (MoD), Army HQ, and the Additional Directorate General Territorial Army can proudly exhibit the activities of ETF as well as employ the concept as a tool of military diplomacy and keep it relevant and updated for future environmental security challenges. In this exercise, the first structural issue is consolidation of our own disparate work under one umbrella by nominating Centres of Excellence – a task yet to be implemented.

Stewardship of MoD. MoD needs to encourage this endeavour. Besides the Services, there are other civilian organs of MoD such as Ordnance factories, DRDO, defence lands, Military Engineer Services (MES), Cantonment Boards and other institutions that need to be included comprehensively. The weakest link is lack of good empirical data. Without empirical data, no worthwhile planning and progress is possible. For example, what is the overall status and future potential on the vast defence land for planting of jatropa or solar or wind farms? Or what is the emission from all equipment and infrastructure (emission by source) under MoD and capture of greenhouse gases by sinks?

A Single Point Contact. The present absence of a single point contact on ecological matters in the military is a matter of management. For example, ETF is under TA Directorate, the QMG Branch is concerned more with defence land. The Corps of Engineers has a focus on non-fossil energy and road-building in the fragile Himalayas and soon they may be mandated to take up climate proofing of defence infrastructure against extreme weather events and sea-level rise (as well as adaptation of the coastal infrastructure). TG, EME is in-charge of current and futuristic technologies which now include green technologies, reduction of dependency on fossil fuels, and so on. Halon banking is under the DRDO. Jurisdiction over defence land is divided between the MoD, land bureaucracy along with army formations and units. Naval and air force assets are under their own HQ. All institutions within the military now have to update their skills and knowledge based on both, traditional ecological knowledge and new frontiers

of knowledge about preserving biodiversity including soil fertility in a rapidly changing climate. However, these institutions within the army and within the Services are in separate silos. HQ IDS should be made the nodal agency, supported by the futuristic Indian National Defence University (INDU) for the intellectual aspects, as an appropriate forum to be the virtual centre of data of ecological restoration of the three Services and the Coast Guard.

Initial Steps. Commands can evolve simple formats like reports and returns for ecological activities to the Ecological Cell. Similar reports and returns can be instituted in the other Services. In parallel, publications such as the *Sainik Samachar* can carry an exclusive section devoted to ecology by an active network with Ecological Cell and TA Directorate in the initial stages. Each line directorate, institution or Service needs to nominate a Centre of Excellence on the expertise it possesses. Think tanks and universities[10] working on military-environment interface also need to be integrated.

Indian National Defence University (INDU). Once set up, INDU may be the ideal place to house the nodal Centre of Excellence with academic staff, which must be a combination of qualified civil academics and military officers. Each institution that performs an ecological task like the ETF may also have a networked structure. The defence-related think tanks that conduct research in the field of environmental security can likewise encourage scholarship. They may also act as nodes for specific tasks – the manner in which CAPS undertook the innovative halon banking exercise with the UNEP during 2008-2010.

Future Challenges and Suggested Way Forward. College of Military Engineers (CME), Pune can be co-opted for nuclear, biological, chemical, and radiological matters. The Army Medical Corps (through the Armed Forces Medical College, Pune) can be incorporated to address new / old strains of infectious diseases. Station Commanders, in coordination with the Cantonment Boards, can be tasked to recommend new ideas for use of defence land (planting of ecologically sound trees or solar farms keeping aesthetics in mind, and so on), hygiene, sanitation, and waste management – how the existing waste is to be disposed,

recycled, reused, and finally reduced to zero. As a part of the National Action Plan for Climate Change (NAPCC) – National Mission on Sustainable Habitat, Military Engineer Services and DRDO can be encouraged to give innovative and cost-effective proposals regarding green buildings. To begin with, carbon footprint of all buildings can be recorded and inventory made for time series data (annual) so that they could be modified appropriately to green buildings where possible. Indian-manufactured solar panels, water-related technologies, and wind mills can be supplied to military stations. These may even be exported to other countries if the WTO rules peermit.

Maritime Ecology. The Indian Coast Guard is already mandated for oil spill clean-up and can build its expertise to engage further with foreign coast guards in the region. In Thailand, the Naval Special Forces, familiar with underwater marine ecosystem, are mandated to restore mangroves in degraded coastal regions. The Indian Navy may like to interact with the Thai Navy to learn some of the practices in mangrove restoration and management.

Emissions from Warships and Aircraft. The three Services can study and quatify emissions from military aviation and warships for international negotiations.

Military Diplomacy

Military, through its ecological good practices, has a new role in diplomacy and in international relations. In military-to-military diplomacy India needs to consolidate its traditional strength in matters of biodiversity and ETF-type of work. To start with, developing countries will feature more in our diplomatic outreach. But as our expertise expands, even the developed countries may take a leaf out of our practices for their requirements. The long-term strategic effects of this type of diplomacy will be worth the effort. If we ignore ecological health, we will be destroying biodiversity which is a wealth not yet measured in monetary or GDP terms. Green and sustainable practices are the future of civilisation and the Indian military must maintain the lead.

Conclusion

It needs to be remembered that Joint Doctrine of Indian Armed Forces, quoted in the beginning, has made us re-think about ecology. This article has attempted to recommend pathways to convert doctrine to practice.

Endnotes

[1] *Global warming of 1.5°C* … at http://report.ipcc.ch/sr15/pdf/sr15_spm_final.pdf

[2] Sunita Narain, "The Wake Up Call", *Down to Earth,* 16-31 October 2018, pp. 32-43.

[3] Suman DasGupta, "Chapter 16 Environmental Security in India", in Sumit Ganguly, Nicolas Blarel, and Manjeet S Pardesi (eds.), *The Oxford Handbook of India's National Security,* 2018.

[4] Email correspondence.

[5] P.K. Gautam, *Environmental Security: Internal and External Dimensions and Response,* New Delhi, USI of India /Knowledge World 2003; and *Environmental Security: New Challenges and Role of Military,* IDSA/Shipra Publication, New Delhi, 2010.

[6] *Proceedings of a Panel Discussion on Climate Change held at USI, New Delhi on 03 February 2010,* USI of India, New Delhi, April 2010.

[7] Internet correspondence of December 2016 with unit tasked.

[8] Since renamed as US Indo-Pacific .

[9] The rescue of teenage footballers in Thailand who got entrapped in a cave during rainy season of 2018 was performed by the Thai Special Forces. Thus demonstrating the dual necessity of SF and non-traditional tasks.

[10] Two civilian academics have a PhD on the military and environment. They are Dr Dhanasree Jayaram , Manipal Academy of Higher Education and Dr Anjan Kumar Sahu, Central University of Rajasthan, Ajmer.

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