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EDITORIAL

The Editorial Board is immensely happy to present the 73rd issue of Bangladesh Army Journal to the esteemed readers. Bangladesh Army Journal acts as a professional mouthpiece of the military writers and it serves as an important medium for the professional development of officers of Bangladesh Army. The subject matters of this issue encompass multifarious facets of military profession along with glowing representation on think tanks, contribution of Bangladesh Army in ensuring national food security through Swarno Dweep, quality education in Bangladesh Army run educational institutions, explosive incident countermeasures, role of Bangladesh Army during the flood of 2022, leadership traits in asymmetric warfare, command philosophy of Chief of Army Staff as vaccine against toxic leadership, impending global economic recession, enhancement of integrating Virtual Reality simulation training and exploring opportunities beyond peacekeeping missions.

To keep pace with the fast changing and progressive trends of modern world, we need to acquire knowledge on various disciplines and keep ourselves abreast with the current changes. In this perspective, we have always taken adequate care of publishing the scholarly articles in Bangladesh Army Journal which would not only create interest but also enrich the knowledge of the erudite readers. The editorial board had been arduously dedicated to elevate the scholastic excellence of this issue. We would feel amply rewarded if the readers find the innovative and thought provoking dissertations of the current issue worth reading and satisfying.

The Editorial Board gratefully acknowledges the prudent and keen observance of **General S M Shafiuddin Ahmed, SBP (BAR), OSP, ndu, psc, PhD, the Chief of Army Staff, Bangladesh Army and Chief Patron of Bangladesh Army Journal** whose professional acumen and constant guidance have made the qualitative enrichment of the journal. We are also indebted to Chief of General Staff, Bangladesh Army for his valuable advice and suggestions given to the editorial board to elevate the standard of Bangladesh Army Journal. We congratulate all the writers who contributed for this issue despite their busy schedule of professional commitments. We would also like to thank all concerned who have cooperated us in publishing the journal. We are optimistic that the writers would keep sharing their ever flowing fountains of ideas to produce even better, more resourceful and enlightening articles in future for our esteemed readers.

COMMAND PHILOSOPHY OF CHIEF OF ARMY STAFF, BANGLADESH ARMY: THE VACCINE AGAINST TOXIC LEADERSHIP

Lieutenant Colonel Sarker Md Iqbal Hossain, psc

“Leadership is a two-way street, loyalty up and loyalty down. Respect for one’s superiors; care for one’s crew.”

-Rear Admiral Grace Hopper

Abstract

The positive attributes of the leaders are essential for effective functioning while the negative attributes can harm the organization. These negative attributes are termed as ‘Toxic Leadership’ by many scholars in present day studies. Toxic leaders are selfish in nature and keep self before organization. They are micro-manager and blame under-commands in case of failure and resist criticism. Impacts of toxic leadership are diminishing organizational values, lower job satisfaction of the followers, grouping and micro-management of any situation. If not addressed in time, then toxic leadership can cause severe damage to the organization. Command structure of the army is pyramid in nature by default and commanders enjoy certain authorities over their under-command. Such environment of the army is conducive for toxic leaders to grow and excel. Bangladesh Army is of no exception. Chief of Army Staff, Bangladesh Army, General S M Shafiuddin Ahmed, SBP (BAR), OSP, ndu, psc, PhD articulated his command philosophy and visions. It is found in this study that if his command philosophy and visions are implemented and practiced then those will act as vaccine against toxic leadership.

Keywords: Command philosophy, toxic leadership, micro-manager, organizational values, vaccine, job satisfaction.

Introduction

Leadership is one of the most important factors for the effective functioning of an organization or unit. Many studies have been conducted to ensure positive leadership that enhances organizational efficiency. Many theories of positive leadership appeared to assume that dysfunctional leadership was simply the absence or opposite of effective leadership¹. Research in the field of leadership has traditionally been dedicated to the study of leadership styles and practices that increase effectiveness and productivity as well as employee motivation, commitment and well-being, among other factors. However, since the early 1990s, and especially since the turn of the millennium, an interest has emerged in exploring the potential negative and destructive aspects of leadership behaviour and practices². However, present-day studies tried to define negative

¹ Schimdt, A. A. (2014). *An examination of toxic leadership, job outcomes, and the impact of military deployment*. Maryland, USA: University of Maryland, College Park ProQuest Dissertations Publishing.

² Thomas Hol Fosse, Skogstad Anders, Stale Valvatne Einarsen (2019). Active and Passive Forms of Destructive Leadership in a Military Context: A Systematic Review and Meta- Analysis. *European Journal of Work and Organizational Psychology*.

leadership in many ways. 'Toxic Leadership' is one of those many negative leaderships that cause haemorrhage to any organization. Toxic leaders affect an organisation and its men's performances through their self-destructive leadership. Military operates on mutual trust and respect between the leaders and the led. Thus, a toxic leader in the military can cause grave damage to his outfit.

Bangladesh Army has achieved glorious fame amongst many armies of the world due to competent leadership. The most vivid example is the United Nations Peacekeeping Missions. On the other hand, unlike many organizations, the army is also experiencing some barriers pertinent to its units' functional aspects. Recent studies termed bad leadership characteristics as 'Toxic Leadership'. The command structure of the army is a pyramid in nature by default and the leaders can use their authority. Thus, such an authoritative command climate can create scope for toxic leadership which can be very harmful to the outfit and damage the synergy of the organizations. (e.g. Fors Brandebo et al.,2016). Moreover, several characteristics of military organizations have the potential to influence the impact of destructive leadership. Therefore, military leaders need to understand the attributes of toxic leadership and take preventive measures. Bangladesh Army has earned its fame through the hard work and dedication of its men. Officers being the leader of men play an important role in earning this fame. As a leader, officers must maintain honesty and integrity, sincerity and loyalty. Since the cost of toxic leadership is devastating, they must uphold a healthy military environment and take precautions to avoid it. Thus, Bangladesh Army should take endeavour to study the effects of toxic leadership and take countermeasures in case it plagues our beloved army.

In this context, this paper will discuss the patterns and characteristics of toxic leadership and their impacts on an organization like the army. It will also analyze the command visions and philosophy of the Chief of Army Staff (CAS), Bangladesh Army to find effective ways to prevent toxic leadership in Bangladesh Army. The paper is based on a qualitative analysis of various research papers and the author's personal experience of serving in Bangladesh Army.

Understanding Toxic Leadership: Patterns and Characteristics

The very concept of leadership is elusive and tricky. It is hard to define it in a way that is satisfactory to everyone, although most people believe they know it when they see it³. This statement applies to both good and toxic leadership. It is difficult to identify toxic leadership in a leader. A façade of sincerity can also be toxic. In the end, it is not one or any specific behaviour that deems toxic; the cumulative effect of demotivation on unit morale and climate over time tells the tale. Toxic leaders might be highly competent and effective in a short-sighted sense, but they contribute to an unhealthy command climate with ramifications extending far beyond their tenure⁴. Three key elements of the toxic leader syndrome are as follows:

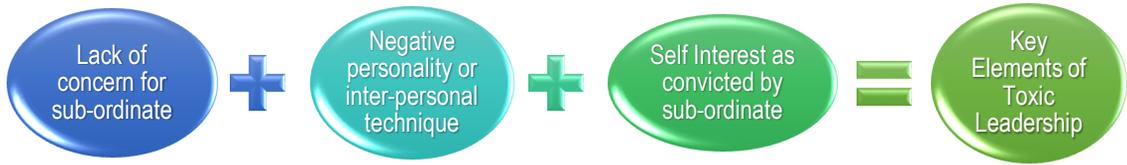
- a. An apparent lack of concern for the well-being of subordinates.
- b. A personality or interpersonal technique that negatively affects organizational climate.
- c. A conviction by subordinates that the leader is motivated primarily by self-interest⁵.

³ Sample, S. B. (2003). *Contrarian's Guide to Leadership*. USA: Warren Bennis.

⁴ Reed, C. G. (2004). Toxic Leadership. *Military Review*, 67.

⁵ Reed, C. G. (2004). Toxic Leadership. *Military Review*, 67.

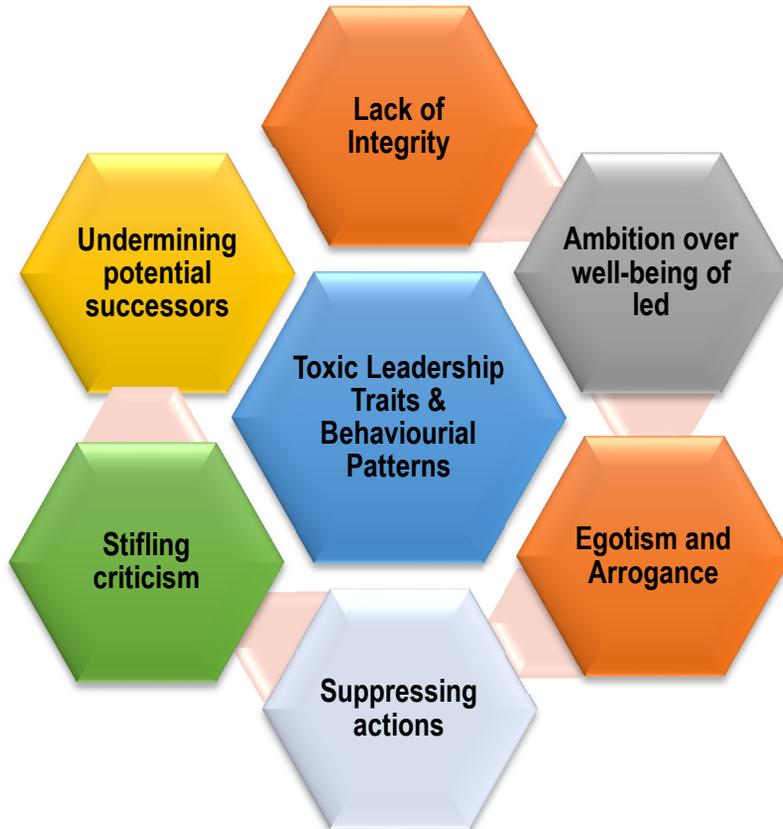
Figure 1: Key Elements of the Toxic Leaders



Source: Author's Own Construct

Jean Lipman–Blumen provides the most descriptive and inclusive definition of toxic leaders. To him, leaders who engage in numerous destructive behaviours and who exhibit certain dysfunctional personal characteristics are termed as toxic leaders⁶. These traits and behaviour patterns include the following as shown in Figure-2:

Figure-2: Toxic Leadership Traits and Behavioural Patterns⁷



Source: Author's Own Construct

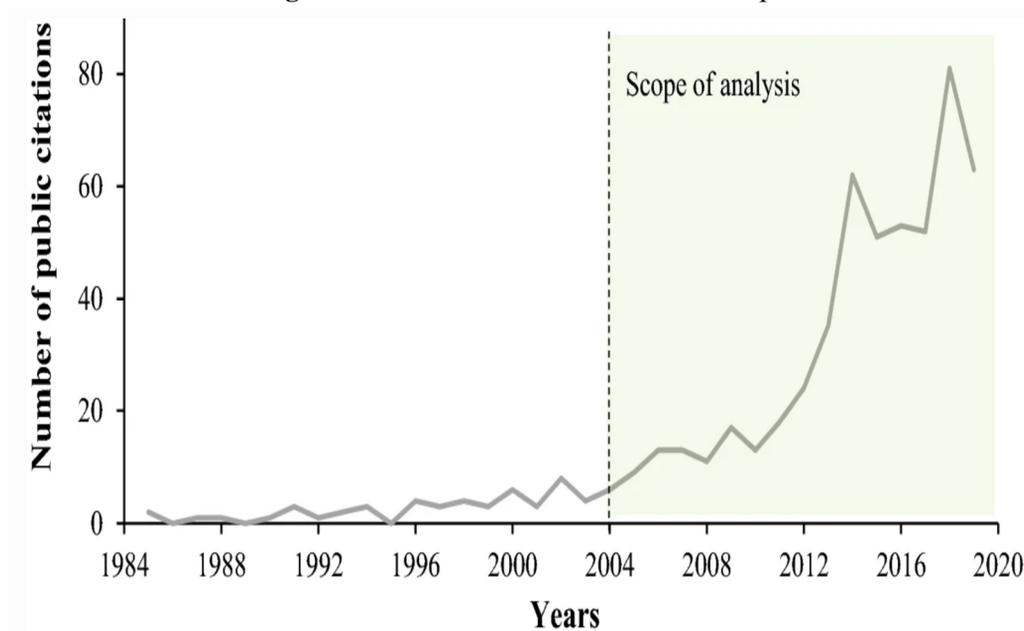
⁶ Blueman, J. L. (2003). Allure of Toxic Leadership. *Oxford*, 318.

⁷ Blueman, J. L. (2003). Allure of Toxic Leadership. *Oxford*, 318.

- a. Lack of integrity and honesty. Lying to followers to bolster a powerful vision.
- b. Outsized ambition that puts the leader's quest for glory above the wellbeing of others.
- c. Egotism and arrogance that foster incompetence and corruption.
- d. Actions that "intimidate, demoralize, demean and marginalize" others.
- e. Breaching opponents' and followers' basic human rights, and stifling criticism.
- f. Holding tight to power by undermining potential successors.

Characteristics of Toxic Leaders. Defining toxic leaders' characteristics is as elusive as defining the leadership itself. Maximilian Scheffler and Johannes Brunzel showed in their paper that over the years many researches have been conducted to define 'Toxic Leadership'. Figure-3 exhibits the year-wise graph.

Figure-3: Publications on Toxic Leadership⁸

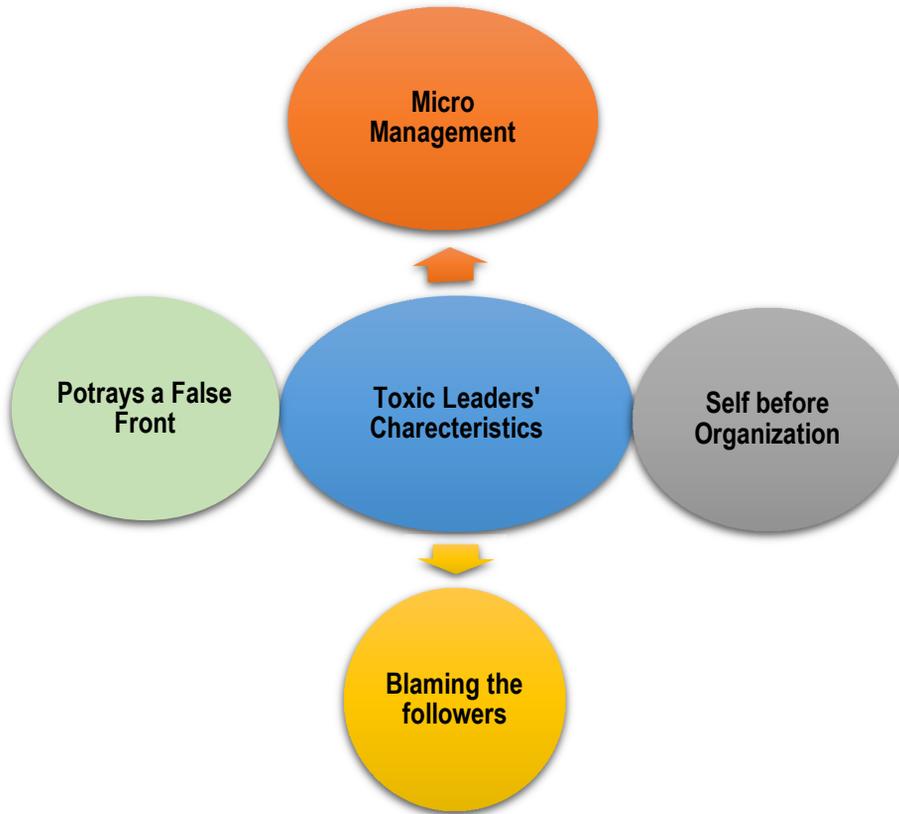


Source: Destructive Leadership in Organizational Research: A bibliometric Approach by Maximilian Scheffler and Johannes Brunzel

However, in any organization, toxic leaders exhibit certain characteristics in their behaviour and activities impacting the performance of both the individual and the organization. These characteristics are commonly known as micro-management, sense of personal interest before organization, blaming under command for failure and portraying false front in the unit or organization. Figure-4 represents the characteristics of toxic leaders.

⁸ Maximilian Scheffler and Johannes Brunzel. (2020). *Destructive Leadership in Organizational Research: A bibliometric Approach*. www.SpringerLink.Com

Figure 4: Toxic Leaders' Characteristics



Source: Author's Self-Construct

Micro-Manager. The first principal characteristic of a toxic military leader is micro-management invading the privacy of others. Over-energetic leaders are more interested in the private affairs of their subordinates, peers, and superiors than they are in moving the organization forward. The micro-manager tends to search through desks and office spaces of subordinates looking for problems. The toxic leader has no regard for the property, feelings, dignity, or privacy of others. This is the type of leader that reads others' mail whether public or private assuming that there is something the subordinate is hiding from them. They listen to phone calls and believe it to be their right to monitor or invade the privacy of others⁹.

Self before Organization. Leaders usually care about the mission, their organization and their subordinates; on the other hand, toxic leaders do not have the values to place organizational needs before. This concept of selfishness includes something more than a mere lack of selfishness. Toxic leaders maintain purely self-centred values and self-pointing¹⁰.

⁹ Box, J. E. (2012). *Toxic Leadership in the Military Profession*. USA: U.S.A Army War College.

¹⁰ Williams, D. F. (2015). *Toxic Leadership in U.S Army*. U.S.A: U.S Army War College.

Blaming Under Commands in Case of Failure. Toxic leaders tend to blame their subordinates in case of a failure or fiasco. Toxic leaders do not have the traits of taking responsibility for their actions or decision. Whenever a situation gets worse, toxic leaders avoid responsibilities. However, when situations are in favourable condition, this type of leader is found active in taking credit.

Portrays a False Front. Toxic leaders hate to hear others' ideas, don't like bad news and are usually involved in unethical or immoral activities that compromise the values of the organization. Toxic leaders are not open to criticism and they do not learn from their mistakes¹¹. As a result, without active listening and behaving ethically, the toxic leader creates a dysfunctional climate in the unit.

Impacts of Toxic Leadership in the Army

Toxic leadership affects the performance of the individual and organization in many ways. A toxic leader breaks the fabric of the organization and dilutes the core values. Many scholars explain toxic leadership in any organization by the Toxic Leadership Triangle as shown in figure 5.

Figure 5: Triangle of Toxic Leadership



Source: Author's Own Construct

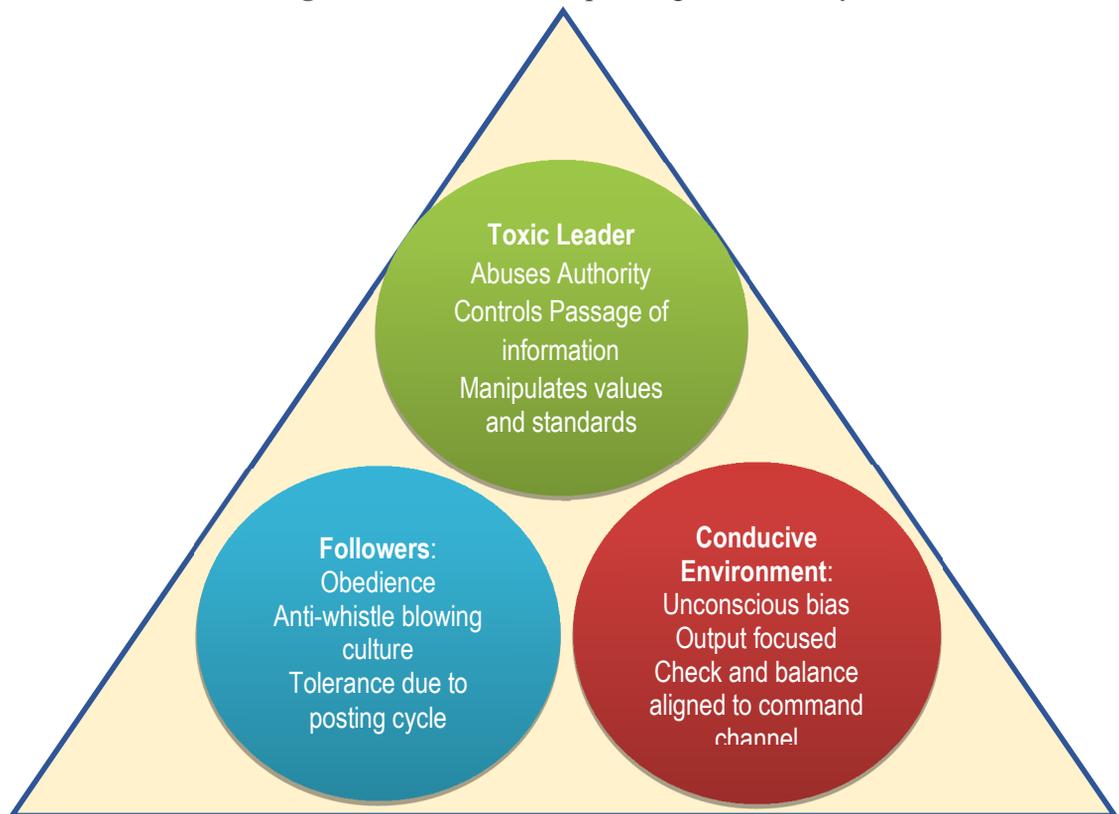
A toxic leader needs a conducive environment and susceptible followers to survive in an organization. Four elements contribute towards a conducive environment: instability, perceived threat, questionable values and standards and an absence of governance. Toxic leaders will either take advantages or seek to create such an environment in the organization to survive, succeed, and excel. Toxic leaders also need followers who are defined as conformers and colluders. Conformers are focused on self-preservation and unlikely to challenge the toxic leaders while colluders are

¹¹ Box, J. E. (2012). *Toxic Leadership in the Military Profession*. USA: U.S.A Army War College.

proactive to take advantages of toxic leaders to replace them in future. Unless identified and addressed in time, the individual and the organization suffers in many ways that lead to ultimate failure. The army is a pyramid organization where the leaders can exercise both command and leadership at every level. The outcome of toxic leadership can be fatal if not addressed properly.

Colonel George E Reed of the U.S. Army said, “To suffering subordinates, toxic leaders represent a daily challenge that can result in unnecessary organizational stress, negative values, and hopelessness”. Toxic leaders are anathema to the health of units. They run their units into the ground, casting a wake that is obvious to those who assume leadership positions behind them. Soldiers serving under toxic leaders can become disenchanted with the Army. The pattern and behaviour of the toxic leaders in the army are almost similar to other organizations. The triangle of toxic leadership in the army can also be explained with a conducive environment and susceptible followers as shown in Figure-6.

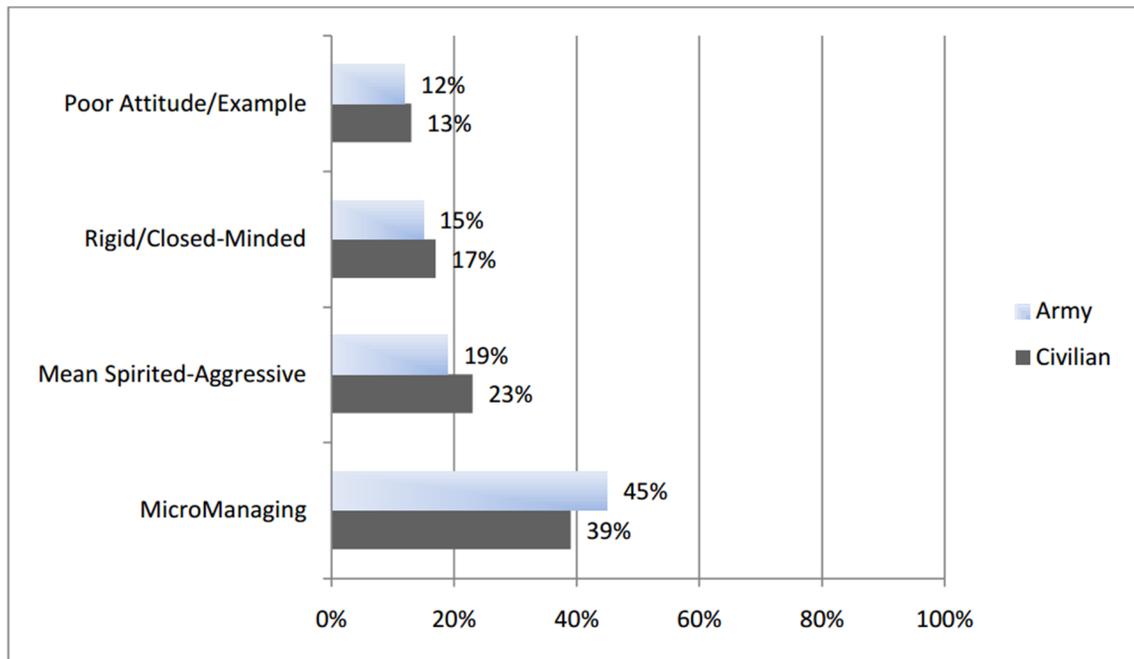
Figure 6: Toxic Leadership Triangle in the Army



Source: Author's Own Construct

Effect of toxic leadership is harmful to both military and non-military organizations. A study conducted by John P. Steele of the U.S. Army shows the comparison of the effect of toxic leadership on military and non-military organizations (Figure 7).

Figure 7: Comparison of Effect of Toxic Leadership on Military and Civilian Organizations¹²



Source: *Antecedents and Consequences of Toxic Leadership in the U.S. Army: A Two-Year Review and Recommended Solutions* by John P. Steele

Toxic leadership in the army affects the individual and the organization in many ways. The organization loses its core values and the individual loses job satisfaction and becomes demotivated towards the organization. The impacts of toxic leadership in the army as explained below:

Diminishing Organizational Values. The army is an organization that runs on morals and values. Toxic leaders undermine organizational values to fulfil self-interest by redefining the organization's goals and assigning importance to them¹³. As a result, the core values of the organization diminish gradually.

Micro-Management of any Situation. As micro-manager, toxic leaders tend to micro-manage any situation. They invade the privacy of under commands and cause disarray in the command environment. For example, a commanding officer, being a toxic leader, will interfere in the command of his company commander. Instead of giving mission-oriented tasks under commands, toxic leaders commit themselves to minute details. As a result, the under command lose initiative and follow orders blindly.

¹² John P. Steele. (2011). *Antecedents and Consequences of Toxic Leadership in the U.S. Army: A Two-Year Review and Recommended Solutions*. Kansas: Center for Leadership Doctrine

¹³ Rahman, M. M. (2020). *Toxic Military Leadership in Bangladesh Army- Its Impact and Ways Forward*. Dhaka: National Defence College.

Lower Job Satisfaction. Job satisfaction of an individual has four variables; satisfaction with the leader, the pay, the job and the coworker¹⁴. Toxic leader affects job satisfaction in all four dimensions. The behaviour of toxic leaders affects the morale of their subordinates¹⁵. Therefore, the subordinates lose interest in day-to-day affairs. These toxic leadership behaviours ultimately have a greater negative effect and lower the job satisfaction of the under command in the organization¹⁶. On the other hand, toxic leadership creates colluders who exhibit extra loyalty and promote anti-whistle culture leading to a catastrophic failure.

Reduced Commitment to the Organization. Reduced commitment to the organization is another impact of toxic leadership. The subordinates under a toxic leader suffer a lot due to a negative command environment. Toxic leaders are focused on short-term goals. As a result, they overlook the welfare of his under-commands. Due to such lower organizational commitment by the leader, the subordinates lose their commitment to daily tasks¹⁷. Toxic leadership behaviour has a greater negative effect on organizational commitment when toxic leadership is overlooked or rewarded for success in the short-term mission.

Grouping and Conflicts among Men. Internal grouping and conflict among the soldier are other impacts of toxic leadership. Toxic leaders often fail to develop team spirit and cohesion among the team members¹⁸. As discussed by Burns, toxic leaders are always concerned about their benefits. They always give additional privileges to their chosen persons and use them to fulfilling self-interests. They motivate people to work as spies within the same organization and sometimes receive wrong information from them. Toxic leaders remain biased toward such information and, in many instances, under-commands are victimized¹⁹. Such activities led to internal grouping and conflicts among the soldiers. A study on soldiers of U.S Army by Andrew A Schmidt shows how toxic leadership has degraded group cohesion in different conditions (Figure 8).

¹⁴ Schimdt, A. A. (2014). *An examination of toxic leadership, job outcomes, and the impact of military deployment*. Maryland, USA: University of Maryland, College Park ProQuest Dissertations Publishing.

¹⁵ Rahman, M. M. (2020). *Toxic Military Leadership in Bangladesh Army- Its Impact and Ways Forward*. Dhaka: National Defence College.

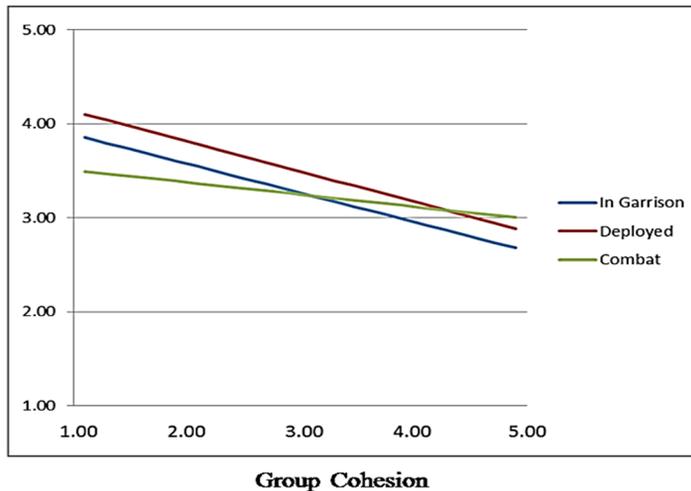
¹⁶ Burns, W. A. (2017). A descriptive literature review of harmful leadership styles: Definitions,. *Creighton Journal of Interdisciplinary Leadership*.

¹⁷ Mehta, S. (2014). Toxic Leadership: Tracing the Destructive Trail. *International Journal of Management*, 23.

¹⁸ Nivedita Singh, S. S. (2018). *Toxic Leadership: The Most Menacing Form of Leadership*. U.S.A.: Intechopen.

¹⁹ Rahman, M. M. (2020). *Toxic Military Leadership in Bangladesh Army- Its Impact and Ways Forward*. Dhaka: National Defence College.

Figure 8. Effect of Toxic Leadership on Group Cohesion²⁰



Source: *An Examination of Toxic Leadership, Job Outcomes, and the Impact of Military Deployment* by Andrew A Schmidt

In Figure-8, the red line depicts that the cohesion among the subordinates decreases when they stay in the garrison, but it is moderate when they remain deployed and comparatively better in the combat zone. Since Bangladesh Army are mostly stationed in garrisons, toxic leadership will severely affect cohesion among the subordinates. Toxic leaders do not add value to the organizations they lead, even if the unit performs successfully under their watch. They do not engender high levels of confidence that lead to unit cohesion and esprit de corps²¹.

Preclusion of Upward Communication. Toxic leaders do not allow upward communication. Usually, many immoral activities of toxic leaders remain unexposed. These incidents are seldom exposed by accident, by the outburst of internal conflicts or when a subordinate becomes a whistleblower. The military is a hierarchical organization, and for subordinates to band together to remove a leader is unlikely²². Hence, toxic leadership prevails in many circumstances.

Implementing Command Philosophy of Chief of Army Staff as Vaccine against Toxic Leadership

The Chief of Army Staff of Bangladesh Army, General S M Shafiuddin Ahmed, SBP (BAR), OSP, ndu, psc, PhD has articulated his command philosophy and vision for the army. The command philosophy is a well-articulated guideline for the organization to achieve its mission. However, the philosophy also provides guidelines as preventive measures against toxic leadership

²⁰ Andrew A Schmidt. (2014). *An Examination of Toxic Leadership, Job Outcomes, and the Impact of Military Deployment*. The University of Maryland.

²¹ Reed, C. G. (2004). Toxic Leadership. *Military Review*, 67.

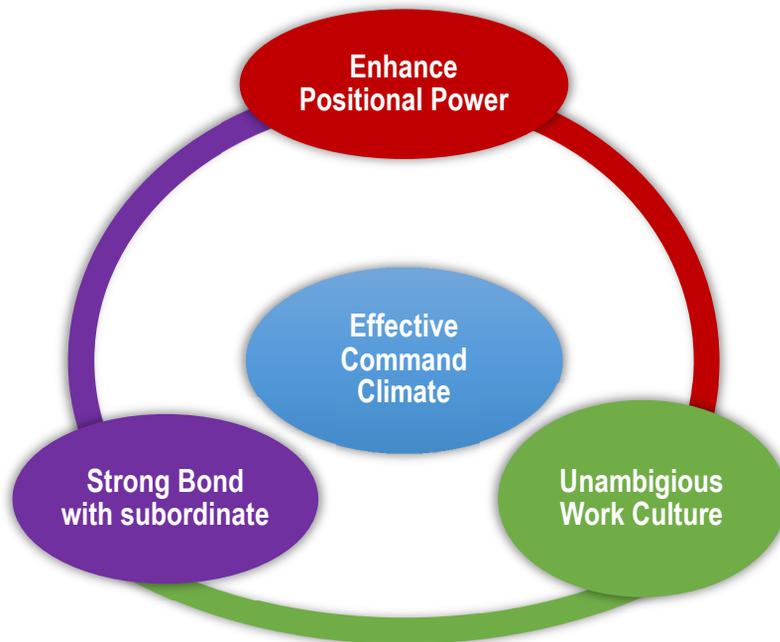
²² Aubrey, L. C. (2012). *The Effect of Toxic Leadership*. U.S.A: U.S. Army War College.

in the organization. Possible ways to implement CAS's command philosophy in eradicating toxic leadership from Bangladesh Army are as follows:

Adherence to Enduring Values. All military activities are based on some enduring values. Under-commands should be imbued with these enduring values²³. Leaders at every level must uphold these time-tested values and ethos. Leaders should ensure that their men take pride in the uniform and possess the right kind of values consistent with the military. Respected CAS has defined three fundamental military values: **honesty and integrity, sincerity and loyalty** as the core values of Bangladesh Army. Leaders must instil these three values within themselves and their men to eradicate the impact of toxic leadership. Leaders at all levels can instil these values by inspiring under command. These can be done both actively and passively. For example, a commanding officer can set examples of sincerity by attending unit activities physically to actively inspire his troops. Thereby, after a certain period every member of his outfit will act sincerely.

Creating Effective Command Climate. A leader should always emphasize creating an effective command climate. The basic responsibilities of a commander are to accomplish the mission and look after the welfare of the under command. CAS has articulated a few methods of creating an effective command climate as portrayed in Figure-9.

Figure 9: Methods to Create Effective Command Climate



Source: Author's Own Construct

²³ Ahmed, Lt Gen S M Shafiuddin (2020). My Command and Leadership Perspective: A Way for Developing Effective Command Climate. *Bangladesh Army Journal*, 68th issue.

(1) **Creating a Strong Bond with Subordinates.** A leader should focus on creating a strong bond with his subordinates. The bond between the leader and the lead should be based on mutual trust and confidence. Leaders should be open, honest and sincere to their under-commands. He should present himself openly and truthfully to gain the trust of his under-command. Such leadership behaviour boosts morale and confidence among the subordinates.

(2) **Creating an Unambiguous Work Structure.** The subordinates must have a clear and specific task. Ambiguity will always bring adverse effects on individual and unit performance. Leaders should avoid micro-management of any situation and give mission-oriented tasks to their subordinates. A well-articulated Standard Operating Procedure (SOP) and well-defined chain of command help in creating an unambiguous work structure.

(3) **Improving Commander's Positional Power.** A commander should always try to improve his positional power. All military commanders are bestowed with positional power as per their appointments. However, not all commanders will have the same influencing power over their outfits. To increase positional power influence, one must improve their personal power. General S M Shafiuddin Ahmed, SBP (BAR), OSP, ndu, psc, PhD articulated in his command philosophy that as a leader he tried to enhance his knowledge, nurture good qualities and maintain an attractive appearance to influence his under-command. A leader can increase organizational efficiency by making the command climate effective. A leader must remember that the command's success is directly linked with the under command's performance²⁴. Thus, leaders must try to create an open, transparent and unambiguous work climate in order to build a healthy relationship between the leader and the led which neither allows the leader to be toxic nor the led to be susceptible.

Developing Team Spirit. The army can only succeed in a mission when all its organs/ units work in synergy. Similarly, the unit's success is also dependent on the synergy of its members. In a toxic command environment, the subordinates are demotivated and distressed. Thus, a leader should make necessary efforts to develop team spirit within the outfit. Team spirit fosters a sense of belongingness and creates a strong bond among the members. All should possess team spirit and focus on working continuously towards team building while maintaining effective communication. Every member should be evaluated as a team member and the output should also be evaluated as a team. For example, "Team 19" was the spirit developed by CAS while he was the General Officer Commanding of 19 Infantry Division to develop spirit-de-corps among all members of the division.

²⁴ Ahmed, Lt Gen S M Shafiuddin (2020). My Command and Leadership Perspective: A Way for Developing Effective Command Climate. *Bangladesh Army Journal*, 68th issue.

Enhance Effective Communication. As discussed before, toxic leadership manipulates and controls the passage of information. Only effective communication among all tiers can eradicate the barriers to the passage of correct information to effective leaders and effective leadership is all about communicating effectively. Interpersonal communication or face-to-face communication is a critical factor for success in command²⁵. Leaders should make scopes for formal and informal interaction with troops and allows them to speak out. In Bangladesh Army, formal approaches for interactions are command conferences, officers' addresses, darbar and roll call. On the other hand, informal approaches are social gatherings, picnics, and informal visits to soldiers' accommodations and recreation rooms. Leaders must spell out their vision and mission to their men in simple terms. A functional chain of command is also necessary to ensure effective communication in the unit or organization.

Practice Ethical Decision Making. Toxic leaders make decisions that only favour their interests, whereas, leaders at all levels should practice ethical decision-making based on rationalism. One should make a decision whenever it is required and should not be afraid of making a mistake. However, one should always avoid escalation of commitment errors. A leader should avoid wasting organizational resources to establish a wrong decision to be correct. The indecisiveness of a leader creates an uncomfortable feeling among the subordinates and will increase the communication gap. Sometimes, an ethical decision may be unpopular but it is accepted at every level.

After analyzing the command philosophies of CAS, it is found that the guidelines given by him will not only act as preventive measures but also will eliminate the probable impacts of toxic leadership. Effective team spirit will eliminate micro-management, and grouping among the followers while it will ensure job satisfaction. Toxic leaders cannot be born and excel in the army if ethical decision-making processes are practised and core values are upheld.

Conclusion

Toxic leaders are a menace to any organization. Many organizations around the world are suffering from toxic leadership. Bangladesh Army, a professional organization, needs to guard itself against the menace of toxic leadership. Many works of literature have tried to identify toxic leadership in many different ways. Some studies have shown toxic leaders as power-hungry, egotism and arrogance as identifying factors of toxic leadership. It is found that the characteristics of the toxic leadership triangle are similar to other organizations. Toxic leaders in the army abuse their ranks and positions and impose control on the passage of information. Toxic leadership behaviours ultimately have a greater negative effect and have several impacts like diminishing core values, less job satisfaction of the followers and reduced commitment. Toxic leaders keep

²⁵ Ahmed, Lt Gen S M Shafiuddin (2020). My Command and Leadership Perspective: A Way for Developing Effective Command Climate. *Bangladesh Army Journal*, 68th issue.

themselves before the organization and often fail to develop team spirit. The outcome of toxic leadership can be catastrophic if not identified and addressed properly in time.

Bangladesh Army is a big organization and has a pyramid command structure. Bangladesh Army is also the pride of the nation which has established its worldwide credibility by participating in a maximum number of UN Peacekeeping Missions. But such an organization may also suffer from toxic leadership. CAS of Bangladesh Army articulated his command visions and philosophies for the army to achieve its mission. It is found that his command vision and philosophy act as the vaccine against toxic leadership. The basic responsibilities of a commander are to accomplish the mission and look after the welfare of the under command. The methods to create an effective command climate as articulated by CAS also act as barriers to developing toxic leadership and eliminating the resultant impacts. In a toxic command environment, the subordinates are demotivated and distressed. Thus, a leader should make necessary efforts to develop team spirit within the outfit. Team spirit fosters a sense of belongingness and creates a strong bond among the members. A functional chain of command is also necessary to ensure effective communication in the unit and/or organization to ensure the free flow of information. Team spirit and such functional channels of command will not allow toxic leadership. Practising ethical decision making and upholding the core values will allow the leaders to take unpopular but correct decisions for the betterment of the organization. As such, adherence to the CAS's command philosophies can eradicate toxic leadership impacts.

Recommendation

Bangladesh Army should take following measures to guard against toxic leadership:

- a. CAS's 'Command Philosophy' may be broken down at all functional level like formations, brigades and units to develop effective command climate.
- b. All ranks may be evaluated as a leader, follower and a team member.
- c. Motivational classes may be arranged at all level to understand characteristics of toxic leadership and its remedial measures.
- d. Core values and core performances may be focused more than the micro-management.

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THINK TANKS: AN EVALUATION TO INTEGRATE IN POLICY FORMULATION

Colonel MD Abul Kalam Sumsuddin Rana, afwc, psc, G

Abstract

Durable and effective policy formulation in the 21st century is considered as one the cornerstone for sustained development. This requires systematic research undertakings by professionals. Think tanks are regarded as an effective tool by modern states during policy formulation. Think tanks are not only contributing to political discourses, rather they are frequently pursued by advanced militaries of the world. This integration allows military leadership to understand the policy options from multiple perspectives. Think tank organizations are comprised of experts, academicians, intellectuals, and military professionals. Their research works remain free from influences and hierarchal preferences. This paves the way for think tank to contribute significantly during policy formulation and adaptation. Think tank proliferation in South Asian countries was experienced in the 90's. Their integration during policy formulation may still remain at an emerging state. Bangladesh Army is a brand name in the national and international arena. Bangladesh Army has experienced substantial progress in terms of modernization of its equipment and human resources development initiatives. Different institutions like, Army Training and Doctrine Command (ARTDOC), various directorates at Army Headquarters (AHQ) are the key stakeholders during policy formulation process. However, frequent change in the policy is regarded as major impediment for effective development. Bangladesh Army may integrate think tanks during policy formulation ensuring sustainability of such initiatives. However, preconditions like freedom of research undertakings, adequate financial support, avoiding toxic discourses, etcetera are few of the preconditions for the success of such initiative.

Keywords: Think tanks, policy formulation, rehabilitation of retired military professionals, hierarchal preferences, policy options, military leadership.

Introduction

Globalization, the upsurge of Information Age and the ever-dynamic and complexity of the geo-political scenario are considered as few of the principal challenges to the formulation of durable and effective policies and strategies. To cope-up with this phenomenon, nation-states primarily use different government organizations and institutions. These government apparatuses continuously keep track of the effectiveness of policy and strategy and provide real-time tangible feedback to leadership. Think tank organizations are helping the government in maintaining the credibility with the people. Think tanks may not be the only key to addressing any specific challenge, but they are an effective additional tool a state has at its disposal.¹

¹ Olivier Urrutia, The Role of Think Tanks in the Definition and Application of Defence Policies and Strategies, published in Journal of the Spanish Institute of Strategic Studies, Volume 2/2013, <https://revista.ieee.es/article/download/340/572> retrieved on 24 June 2022.

Military as one of the elements of national power needs to maintain a robust and dynamic posture in accordance with national efforts. With the primary role of safeguarding the sovereignty and territorial integrity, military needs to be well-trained and well-equipped based on threat perception. The ever-evolving security scenario needs careful scrutinization by experts and scholars for assisting military leadership to formulate new policy. Think tanks are being efficiently utilized by modern states for undertaking assessment and evaluation of different defence and security issues. The culture of independence and neutrality of think tanks often provides the leadership appropriate guidelines for a suitable policy option. Think tanks were persuaded by Americans and Europeans before the World War-I. However, after the World War-II and during the Cold War era, the world experienced a definitive expansion in think tank culture by different nations and societies. This spectacle was further accelerated since the 1970s².

Bangladesh is at a crossroad of graduating from middle-income status to developed nation status by 2041. It has been among the fastest growing economies in the world over the past decade, supported by a demographic dividend, strong Ready-Made Garment (RMG) exports, remittances, and stable macroeconomic conditions³. The political stability and dynamic leadership of Honourable Prime Minister Sheikh Hasina along with the optimum utilization of human capital is the key to this sustainable economic growth. The strategies and policies formulated and implemented for the development projects have been often scrutinized by think tanks of various faculties. This culture has boosted the confidence of people in political leadership and governance. Bangladesh Army has progressed over the last two decades exponentially. Steady economic growth of the country influenced the expansion in terms of modern weapons, equipment and the quality of training. Bangladesh Army continuously evaluates the readiness of its human resources according to perceived threat assessment through pragmatic policies and military strategies. Different training institutions along with various branches of headquarters are primarily involved in this dynamic process. However, Bangladesh Army is yet to integrate think tanks in this process. Bangladesh Institute of International and Strategic Studies (BISS) is the leading think tank organization in the country which deals with research on international affairs, security, and developmental issues. As a government institute, conducting research without being guided by the government may not be a viable option for BISS. Bangladesh Institute of Peace and Security Studies (BIPSS) is an independent think tank organization which mostly interacts in strategic parlance. Strategic evaluation needs intervention at the operational level for actionable policy formulation. In this context, Bangladesh Army may pursue integrating think tanks that may work independently to provide durable research-based policy options to leadership for adoption.

In the above backdrop, this paper will explain the culture of think tanks across the globe including their significances. An endeavour will be taken to evaluate the relevance and necessity of inclusion of think tanks in Bangladesh Army. This is an analytical paper based on primary and secondary sources along with writer's service experience in Bangladesh Army.

² Diane Stone, *Think Tanks and Policy Advice in Countries in Transition*, Paper prepared for the Asian Development Bank Institute Symposium: "How to Strengthen Policy-Oriented Research and Training in Viet Nam" on 31 August 2005, <https://www.adb.org/publications/think-tanks-and-policy-advice-countries-transition> retrieved on 24 June 2022.

³ <https://www.worldbank.org/en/country/bangladesh/overview>, retrieved on 25 June 2022.

Understanding Think Tank

It is very difficult to give a precise and comprehensive definition of a think tank as the definition may vary with the functions of a specific think tank organization. Many scholars have tried to articulate the definition in different timeframes. According to Merriam Webster, a think tank is an institute, corporation, or group organized to study a particular subject (such as a policy issue or a scientific problem) and provide information, ideas, and advice⁴. The broadest definition posits that think tanks are “institutions that provide public policy research, analysis, and advice⁵. United Nations Development Programme (UNDP) defines think tanks as “organizations engaged on a regular basis in research and advocacy on any matter related to public policy. They are the bridge between knowledge and power in modern democracies (UNDP, 2003: 6)”⁶. From the definition, it is evident that think tanks provide policy options to leadership based on research and subject matter expertise. Research works undertaken by think tanks are the inevitable realities in global mainstream initiatives and activities. As stated in the definition, think tanks can be classified in two ways: by their strategies and by their sources of funding. The combination of these characteristics results in seven types of think tanks⁷:

Autonomous and Independent. An autonomous and independent think tank remains free from the influence of donors and the government of its home country as it does not receive any internal donations. Therefore, it can perform realistic research on the viability of new policies and strategies. However, external donors may impose indirect influence which remains as a challenge to its impartial image.

Quasi- Independent. A quasi-independent think tank is outside the influence of the government. However, its operations and research works might be influenced by the interest group, donors, or contracting agencies due to the financial support provided to the organization.

University Affiliated. More than half of the think tanks fall under this category. The university-affiliated think tank is a policy research institute under the tertiary or secondary education institution. These think tanks have the advantage of the academic environment and can explore the abundance of resources universities possess.

Political Party Affiliated. A political party affiliated think tank has a formal association with a political party which is openly revealed. These organizations conduct research and analysis on topics and interests of an affiliated political party.

Government Affiliated. A government affiliated think tank is a part of the formal structure of a government and therefore its functions are directly governed and engaged under the government’s authority.

⁴ <https://www.merriam-webster.com/dictionary/think%20tank> retrieved on 28 June 2022.

⁵ James G. McGann, *The Fifth Estate: Think Tanks, Public Policy, and Governance* https://www.brookings.edu/wp-content/uploads/2016/06/chapter-one_-the-fifth-estate.pdf retrieved on 28 June 2022.

⁶ *Op. Cit.*, *Think Tanks and Policy Advice in Countries in Transition.*

⁷ *ibid.* *The Fifth Estate: Think Tanks, Public Policy, and Governance.*

Quasi- Governmental. Quasi-governmental think tanks are funded exclusively by government grants and contracts but are not part of the formal structure of the government.

Corporate Think Tanks. Corporate think tanks are organized on a business model and often take the form and characteristics of ‘profit consulting firms’. They respond to clients’ demands and they tend to drift outside the purely political world occupied by most other types of think tanks.

Significance of Think Tanks

The evolution of think tanks needs to be elaborated to draw its importance in the pursuit of national interest. Existence of think tanks can be traced back in 1865 in the United States. Back then they were research institutions in social sciences, financed by foundations, corporations, and private donors, with the aim of working with the government on institutional reform policy programs, mainly for the development of new management processes⁸. Think tank culture prior to World War I and II was mostly an Anglo-American phenomenon⁹. During this period, the expansion was not significant in comparison to what was demonstrated during the 1960s and 1970s. They became progressively expert and dominant in the policymaking process.

In Asian continent, think tanks started their journey in the 1960s¹⁰. But the booming of think tanks adaptation in policy making was observed during the 1990s. South and Southeast Asian countries reflected a slow pace in the adaptation philosophy for think tanks. However, these countries have progressed remarkably in the 21st century to include think tanks as a bridge between government and general people through their knowledge-based scrutinization of government policies and initiatives. Think tanks in this region were mostly established and organized directly under government control and supervision. The initiative by independent scholars to form think tanks free from government influence has become the new trend in Asian countries. These organizations are assisting the government in sectors like security, geo-politics, social, health and education policy formulation and implementation.

Think tanks can influence public opinion in the domain of international affairs, foreign policy, etcetera. Think tanks endeavour to do so by informing common people through relevant discourse in media, publications, writing op-eds or even through blogs and social media. Think tanks play an instrumental role in raising public awareness on newly enacted or proposed policies or strategies by the government. While conducting constructive criticism, think tanks may offer the government or concerned stakeholders with alternative perspective for a better and more durable solution or policy option. Think tanks can help policy makers to legitimize their policies through providing rationales from a neutral perspective. Think tanks can also contribute establishing International Relations and Strategic Studies¹¹.

⁸ *Op chit*, The Role of Think Tanks in The Definition and Application of Defence Policies and Strategies.

⁹ *Op. Chit*, Think Tanks and Policy Advice in Countries in Transition.

¹⁰ *Ibid*.

¹¹ Think Tanks: Their Development, Global Diversity and Roles in International Affairs, https://www.researchgate.net/publication/259705751_Think_Tanks_Their_Development_Global_Diversity_and_Roles_in_International_Affairs retrieved on 30 June 22.

Defence and security strategy are two important domains where think tanks have been contributing to shaping up the regional and global security dynamics since the beginning of the nineteenth century. The leading think tanks of the western world continuously provide policy options to strategic leaders based on ever-evolving security scenarios on the global platform. Their contributions help the leaders to address the security challenges through wider options. Top ranked think tanks like the Carnegie Endowment for International Peace, Centre for Strategic and International Studies (CSIS), Chatham House, RAND, China Institutes of Contemporary International Relations (CICIR)¹² etcetera deal with the most difficult global problems and safeguard peace and security through independent analysis, strategic ideas, support for diplomacy, and training for the next generation of international scholar-practitioners. It has become a common doctrine for think tanks to undertake research on regional security affairs that thrived across the region to inform states about the threats that affected them both collectively and individually. Think tanks have thus often had widespread participation in informal diplomacy with engagement in this network giving them a high level of political access¹³.

Think Tank Integration by Different Armies

Think tanks are predominantly being pursued by advanced armies of the world. At the regional level, the think tanks are contributing significantly to defence and security related research and policy formulation. It is commonly observed that these organizations often integrate retired military professionals along with academicians of related faculties.

The USA. Think tanks' proliferation in the USA is remarkable and the country possesses the highest number of think tanks in the world. According to '2020 Global Go To Think Tank Index Report' by the University of Pennsylvania, there are 2203 think tanks alone in the USA¹⁴. Policy formulation in the USA is thoroughly examined and validated by these think tanks. The US Military also employ different think tank organizations for assessment and evaluation including advisable policy options on training, overseas employment, technological development, etcetera. The RAND Corporation of the US is one such organization investing to conduct various researches on aeronautical, outer space, information technology, defence, security, and artificial intelligence. It is an independent and non-political neutral think tank maintaining a high standard in its research works. 50% of their budget is directed towards defence-related research projects. Many former Secretaries of Defence and former National Security Advisors work together with this think tank organization¹⁵.

France. France has many think tanks working internally and globally. These think tanks are often integrated into the policy formulation and validation process. The French Institute of International Relations (IFRI) is one such think tank organization that delivers analysis and policy

¹² https://www.training.go.kr/eng/OutEduTrainIntro_6.do retrieved on 05 July 2022.

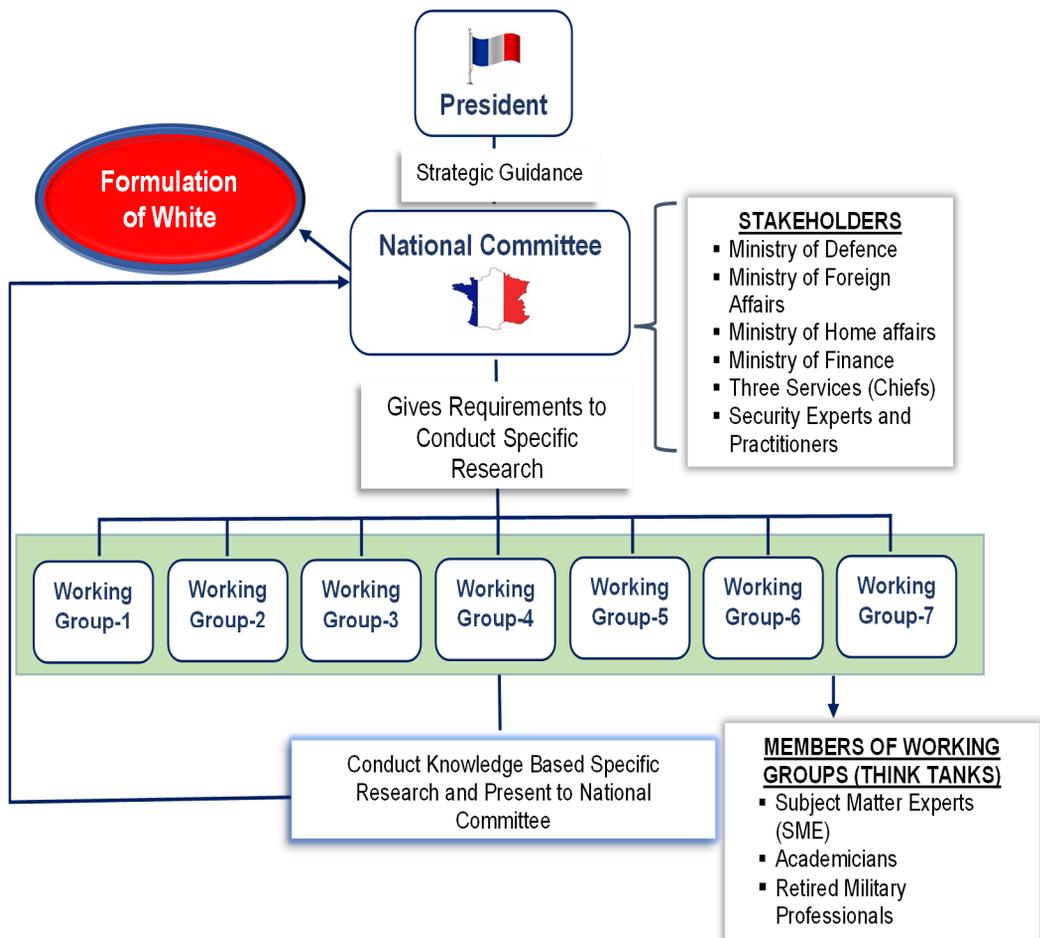
¹³ Karthik Nachiappan, Enrique Mendizabal and Ajoy Datta, Think tanks in East and Southeast Asia Bringing politics back into the picture, December 2010, <https://cdn.odi.org/media/documents/6377.pdf> retrieved on 14 July 2022.

¹⁴ James G. McGann, Global Go To Think Tank Index Report, University of Pennsylvania https://repository.upenn.edu/cgi/viewcontent.cgi?article=1019&context=think_tanks 03 July 2022.

¹⁵ *Op. Cit*, The Role of Think Tanks in the Definition and Application of Defence Policies and Strategies.

options on security and defence. IFRI is ranked 5th most influential think tank in the world according to the University of Pennsylvania’s “Global Think Tank Report 2020” which has reviewed more than 8,000 think tanks from 190 countries¹⁶. The “White Paper” sets out France’s defence and national security strategy and specifies its articulation with the European Union’s common security and defence policy and with the Atlantic Alliance, and the capabilities required implementing it in the next fifteen to twenty years¹⁷. This white paper is prepared by a commission composed of personnel from different ministries. However, this commission is supported by seven (07) working groups that are largely think tanks and mentionable retired military professionals are included in those working groups.

Figure 1: White Paper Perspective Planning Process



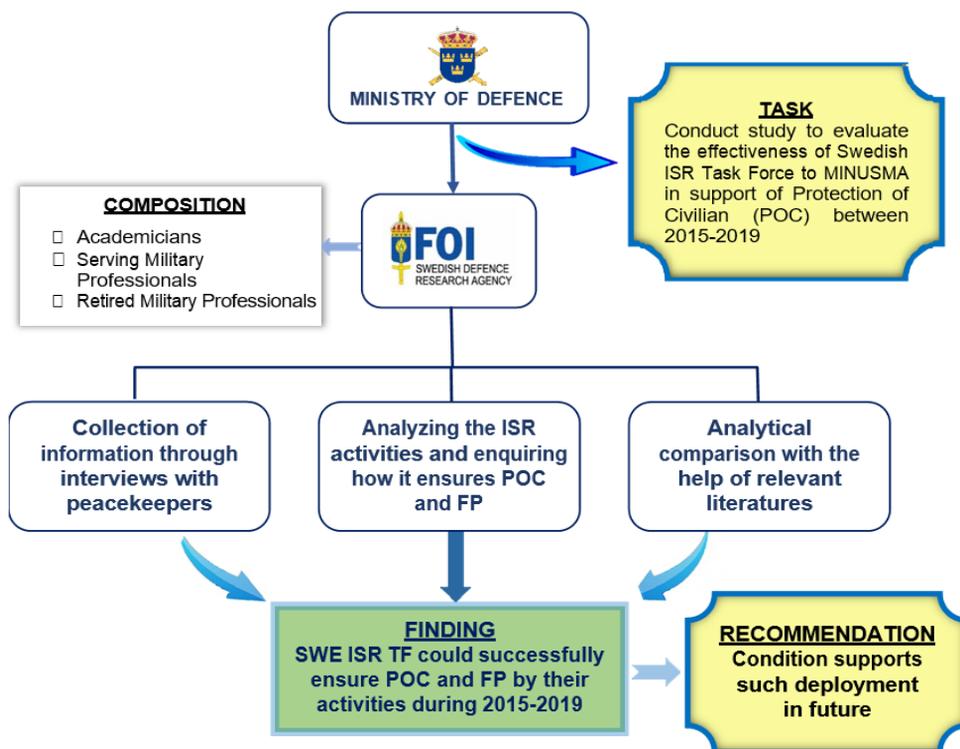
Source: Author’s Own Construct

¹⁶ <https://www.ifri.org/en> retrieved on 25 July 2022.

¹⁷ Defence and National Security White Paper (livreblancdefenseetsecurite.gouv.fr) retrieved on 27 July 2022.

Sweden. The Swedish Military has a unique system of integrating think tanks in the policy formulation process. Swedish Defence Research Agency (FOI) is the leading military think tank in Sweden. FOI is usually commissioned by the Swedish Ministry of Defence, Foreign Ministry, or the Armed Forces command to conduct study/survey on specific topics. They are often asked to evaluate military international engagements. One such evaluation was conducted on Swedish Army’s Intelligence, Surveillance and Reconnaissance (ISR) support to United Nations Multidimensional and Stabilization Mission in Mali (MINUSMA). Between 2015 and 2019, the Swedish Armed Forces took part in this development through the deployment of an ISR Task Force to MINUSMA. This report explores the activities conducted by the Task Force and their relevance to the protection of civilians and force protection. The study finds that these two themes were indeed present throughout the Swedish ISR experience¹⁸. Retired military officers and civilian academicians on international relations and foreign affairs are members of this think tank organization. Think tank such as The Royal Swedish Academy of War Sciences is comprised of retired military professionals who act as a “counterweight” in a planning process or study contributing with different perspectives.

Figure 2: FOI Research to Evaluate SWEDISH ISR TASK FORCE Performance



Source: Author’s Own Construct

¹⁸ Intelligence, Surveillance, and Reconnaissance to Protect Civilians and Troops? The Swedish ISR Task Force in MINUSMA 2015–2019, published by FOI during June 2022.

India. Amongst the South Asian countries, India possesses the highest number of think tanks. Many of those organizations are independent and conduct research works to validate policy options of various government initiatives for public awareness and perception. Indian Military also undertakes research discourses with different security and defence-oriented think tanks. Institute of Defence Studies and Research (IDSR) is one such government-funded think tank who invests in defence and security-related research works¹⁹. Retired military professionals, Ex-Ambassadors and academicians are members of this think tank organization.

Think Tank Proliferation: Bangladesh Perspective

Bangladesh celebrated the Golden Jubilee of her independence in 2021. During this journey of over 50 years, the country went through political turmoil, instability and natural disasters but could withstand all those odds and now stand proudly as one of the fastest-growing economies in the world. After independence, think tanks proliferation was under strict government influence and control. Notable government-affiliated think tanks are Bangladesh Institute of Development Studies (BIDS), BIISS and Bangladesh Institute of Law and International Affairs (BILIA). However, in the 21st century, independent and quasi-independent think tanks could establish dominance in creating conditions for knowledge-based research works. BIPSS, Centre for Urban Studies (CUS), Bangladesh Center for Advanced Studies (BCAS), Bangladesh Council of Scientific and Industrial Research (BCSIR), Centre for Development Research Bangladesh (CDRB), Centre for Policy Dialogue (CPD) are few of the leading independent think tanks in Bangladesh²⁰. According to the ‘Global Go to think tanks Index Report 2020’ by the University of Pennsylvania, Bangladesh has 46 think tanks which is one of the highest in South Asia²¹. Surprisingly, think tanks in strategic and security domains remain a comparatively less explored arena till the present day. BIISS and BIPSS are the only think tanks in this faculty. BILIA is also known for its strategic and security studies, but they also focus on studies on law and international politics²².

Bangladesh Army as one of the main pillars of the constitutional institution has played a major role in maintaining and safeguarding the sovereignty of the country. Bangladesh Army has significant contribution in disaster management and nation-building activities²³. In the recent past, the organization was directly and indirectly involved in different mega projects across the country. Bangladesh Army is a brand name in the country for its organizational competency and well-structured command climate. To cope with the dynamic challenges and to maintain a very high standard of human resources, the army needs to evaluate its training, state of equipment, and command philosophy regularly. This necessitates a robust system based on experience and skills. The existing system of conducting research and development (R&D) is mostly the responsibility

¹⁹ <https://idsr.org.in/> retrieved on 26 July 2022.

²⁰ Ahmed Khaled Rashid, Efficacy of think tanks in influencing public policies: the case of Bangladesh <https://ruor.uottawa.ca/bitstream/10393/23808/1/RASHID%2C%20Ahmed%2020125.pdf> retrieved on 23 June 2022.

²¹ *Op. Cit*, Global Go to Think Tank Index Report, University of Pennsylvania.

²² <https://www.biliabd.org/mission/> retrieved on 16 July 2022.

²³ <https://www.daily-sun.com/post/376986/Bangladesh-Army-in-Nation-Building-Activities-> retrieved on 17 July 2022.

of the Army Training and Doctrine Command (ARTDOC). With the direct supervision of Army Headquarters (AHQ), ARTDOC has already established its mark in the formulation of the training system, updating training facilities, updating training publications, forecasting future requirements, etcetera. However, these efforts by ARTDOC could have been made more dynamic and effective through validation by think tank organizations. ARTDOC may be regarded as a think tank, but the military culture of hierarchical influence and lack of appropriate researchers may act as challenges during its research process and outcome. An independent think tank organization may remain free from the above limitations and could contribute to a durable and effective policy formulation.

The security dynamics in the region and across the world have become more and more challenging. The orthodox method of evaluation and assessment followed for policy formulation may need to be focused on modern system as followed by many advanced regional and global nations. However, it was commonly observed that on many occasions, policies were frequently changed creating difficulties in attaining desired end state. The subsequent discussion will endeavour to address common reasons for such inconsistency:

Lack of Institutional Memory. Human Resource Management (HRM) and carrier progression is a complex issue, and this leads to the frequent posting of personnel specially officers' corps. It is commonly expressed that the army is run by amateurs and they run it well. Frequent posting is a major concern which leads to discontinuation of institutional memory. Any durable process requires capacity building of the human resources for a considerable period. An effective research outcome largely depends upon the knowledge and institutional experiences of the researchers involved. This may not be possible due to frequent changes in important and specific responsibilities.

Appropriate Staffing of R&D Sections. Conducting research needs academic persuasion and a certain level of knowledge proficiency. Besides, the support system needs to be robust to undertake research. Training institutions maintain an R&D section but often those are understaffed, and the staff may lack proficiency. There are certain peripheral issues which sometimes become unavoidable to place competent people at the appropriate organizations, especially in R&D sections.

Overriding Importance of Current Issues. A durable and effective policy needs arduous research work to analyze the issue at hand through all possible parameters. The prominence of handling the current issues always supersedes such requirements. Thus, often policy formulation lacks required knowledge-based scrutinization and research-based database.

Culture of Hierarchical Preferences. The Army is a hierarchical organization based on a strict chain of command. This is a culture followed and nurtured throughout time immemorial. This strict command climate is one of the key reasons for which the army stands as a successful organization. This instilled hierarchical practice often influence decision-making. This phenomenon is hard to avoid and there remains strong logic behind it. However, over the period Bangladesh Army has been investing to promote participatory decision making to make the command environment more flexible. The policy formulation may still be influenced by the hierarchical preferences.

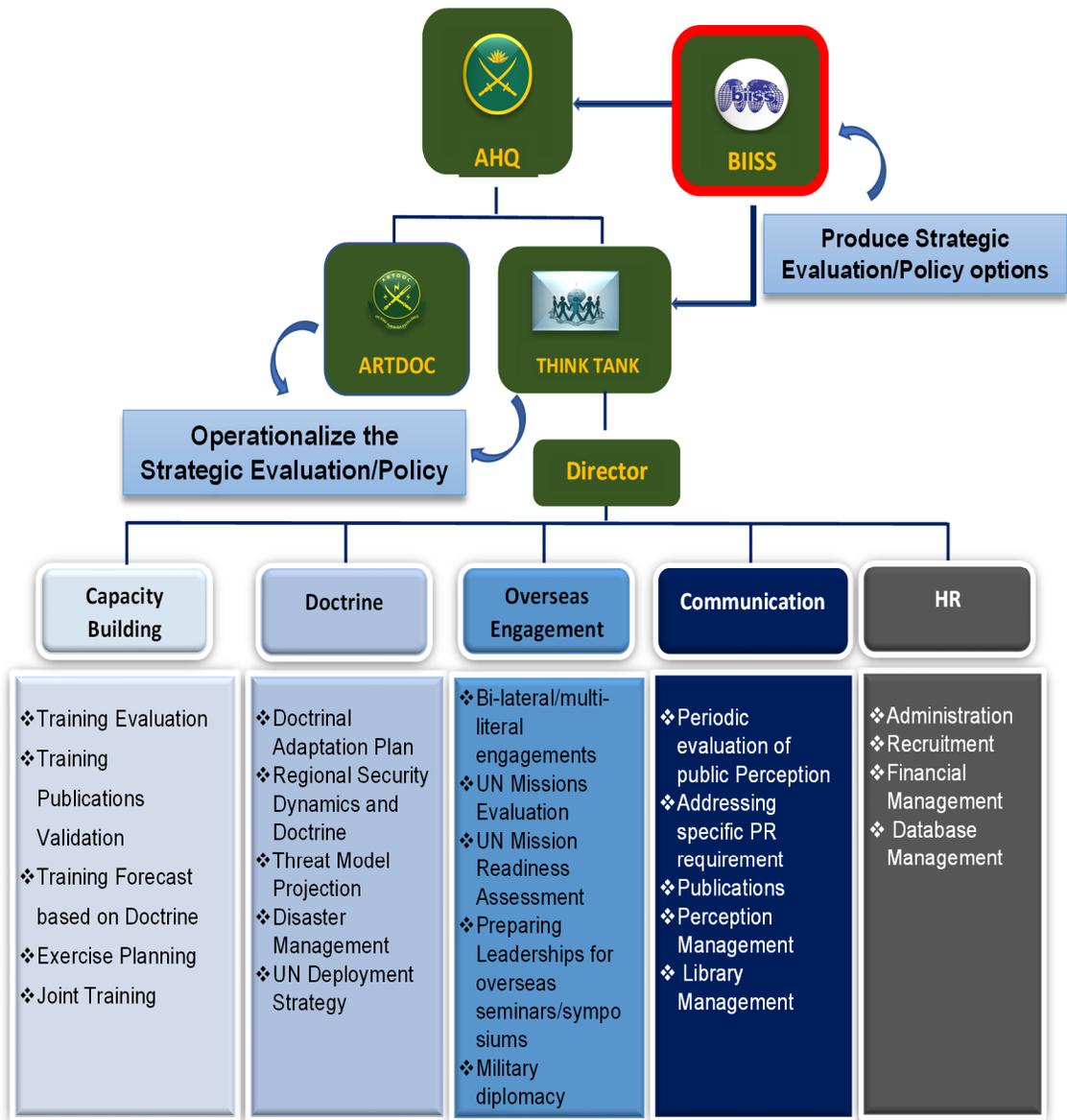
Integration of Think Tanks in Bangladesh Army

Think tanks dedicated to the army must possess a preponderance of experienced professionals who were directly involved with military culture or decision-making process. The uniqueness of military profession allows ex-military to contribute to this arena. The army overnight loses the support of hugely experienced professionals who still could contribute significantly to progression. The Army has many renowned and knowledgeable retired senior officers who might be interested to take part in such academic and professional discourses. The Army took some endeavour to integrate retired senior officers in training institutions as Research/Academic Advisers. This is a noble effort, but it is purely an academic persuasion and lacks a direct contribution towards policy formulation. The Army may undertake feasibility study to integrate retired officers in think tank organization.

BIISS is a leading think tank in the country that invests and contributes at strategic level. However, the linkage between the strategic and operational level is also important for an implementable strategy for a desired end state. The foregoing paragraphs indicate the necessity of think tanks for a durable and effective policy formulation process. These two very important missing links can be well addressed by incorporating think tanks with short, mid and long-term utilization. This think tank initially may be employed on a contract basis financed by the army but ensuring complete freedom of undertaking research works. The quasi-government policy would allow the think tank organization to thrive continuously for a quality research product. Subsequent discussion will present few models which might be adopted by Bangladesh Army to take a step forward for the integration:

Integration with ARTDOC. The existing structure of ARTDOC can be utilized as a launching pad for the integration of think tanks in the army. These think tanks may work as a separate wing of ARTDOC with autonomous authority over its human resources. Initially, the process may start within a controlled environment of ARTDOC command and gradually the control mechanism may be reviewed. Renowned retired military professionals may be approached for their assistance and contribution. Besides, civilian professionals on a subject like International Relations, Strategic Studies, and Development Studies etcetera may also be included in the effort. This initiative must be directed to establish a linkage between strategic guidance/directives and implementable policy options at the operational and tactical level. This body may be asked by ARTDOC to conduct knowledge-based research on certain issues to propose policy options. However, think tanks must be kept free from preferential influence on any given research undertakings. This effort will improve the quality of ARTDOC initiatives directed towards durable and effective policy options. Furthermore, this may help to ensure the retaining of institutional memories for a considerable time. Proposed think tank model is shown in Figure-3:

Figure 3: Proposed Think Tank Model



Source: Author's Own Construct

Independent Think Tank Organization. The credibility and effectiveness of any think tank organization largely depend upon their freedom of undertaking research works. An independent organization remains free from unwanted intervention leading to the production of effective and durable policy options. Bangladesh Army may take steps to finance an independent think tank organization purely undertaking research for recommending policy options to leadership.

However, though the army may support the organization financially, it must not interfere with the research undertaken. Hierarchical preferences must not put a barrier to open-ended scrutinization of the problem at hand. Retired army professionals may be included in this organization to contribute to the development endeavour of the army. This independent organization may undertake research works on training evaluation and recommendations, analyzing the budgetary requirement for the army, recommending capacity building roadmap based on strategic guidelines, preparing seminar papers for senior leadership during bilateral and multinational seminars/symposiums/discourse/cooperation, etcetera. They can also indulge in publishing of periodicals, magazines, monographs, books etcetera. Additionally, they can act strongly to guard against defamation of the image of army through providing recommendations based on public perception on certain issues. However, this will not be a parallel think tank organization to BISS. Strategic domain may still be pursued by BISS and this independent army think tank will concentrate on operationalizing the strategic guidelines. As discussed in the previous paragraph, civilian academicians in related fields may also be integrated in the group. Gradually, the organization should grow their own support system to run as an autonomous body like many leading think tanks in the world.

Contractual Think Tanks Integration. This could be a first step to instilling culture of think tank integration in military decision-making. Army may employ a group of think tanks for research work on a particular issue for recommending policy options. This might also be pursued for a specific timeline. The effectiveness of such effort will largely depend upon the selection criteria of think tanks, time given for knowledge-based research work, freedom of conducting research work, etcetera. However, this might lead to some improvised arrangement and may not achieve the desired effectiveness.

Preconditions for the Effectiveness of Think Tanks Integration in Bangladesh Army

The relevance of think tank integration has been elaborated with the specific contributory roles they might perform. The necessity has also been addressed to bring dynamism in the policy formulation process. Existing command climate of Bangladesh Army can help in adoption of think tanks for progressiveness. There are certain preconditions for the desired effectiveness of think tank organization if pursued with right perspective. These preconditions might vary based on military culture and practices in different countries. However, a few universal and common preconditions need mention to derive positive effects from think tanks integration in Bangladesh Army.

Freedom of Action. The foremost attribute think tank must exercise is the freedom of undertaking research works and projecting the outcome without any prejudice to the client. This attribute normally influences most think tanks being independent and may not be financed by any specific organization or group. However, the quasi-government arrangement may still allow a think

tank organization to work independently. If a think tank organization is adopted by Bangladesh Army, their freedom of action needs to be ensured for effective policy validation/evaluation. The usual culture of being preferential according to leadership's choice needs to be controlled and exercised.

Well Organized Structure. During the research, it was observed that most of the think organizations work under a formal structure. The researchers or Subject Matter Experts (SMEs) are grouped under their field of expertise. A similar structure may be followed for maintaining maximum yield from the group. Initially, the organization may be supervised by ARTDOC. Subsequently, the supervision can be lifted to allow more flexibility in the research work by the group. However, the structure and control measures need elaborate study and further research work.

Adequate Funding. Bangladesh Army may integrate the think tank with one of its existing training institutions or it can be established as an independent entity. A steady flow of financial support would be necessary to start the functioning of the organization. The majority of these funds will be utilized for research purposes. In the long run, the organization should aim to arrange partial funding through publications. This would reduce complete dependency on army.

Avoiding Toxic Discourse. Think tanks on defence and security commonly integrate retired military professionals along with academicians and bureaucrats. These esteemed members are regarded for their knowledge, experiences, and their contribution to the nation. Military maintains a strict command environment and this arrangement must be regarded with due enthusiasm and respect. The researchers must uphold the interest of the Bangladesh Army not establishing his own philosophy with personal statement at the cost of detrimental effects to the organization. Any form of such toxic discourses must be avoided by think tanks to provide leadership policy options based on independent research work.

Adaptation with Command Climate. It has been repeatedly articulated that the army maintains a well-laid down chain of command at all levels. Hierarchical preferences are commonly pursued during all kinds of activities or discourses. Integration of think tanks with the process may lead to inconsistency in the command environment if not addressed appropriately. The evaluation and policy options delivered by think tanks must be accepted to compare with the available options at hand. This might lead to the adoption of a durable policy option.

Conclusion

Think tanks may not be a contemporary subject of professional discourse, but in South Asian countries, think tanks integration in policy formulation may still be at an emerging state. Modern states rigorously pursue the integration of think tanks during policy formulation with a view to connecting public awareness with the ideology of political entities. This effort brings clarity, confidence, liability, and durability to the art of statesmanship. Though it might seem that think tanks are most suited to political practices, in fact, most advanced militaries in the world often integrate think tanks in policy formulation, evaluation, and so forth. This practice commonly contributes to

effective decision making. Think tank organizations are comprised of professionals with valued credentials and expertise. Security and strategy related think tanks often integrate military professionals. This employment offers retired military professionals' dignified rehabilitation. Defence and security related think tank proliferation in the country still has not flourished in comparison to other sectors. The importance of think tanks' participation in the defence and security sector has been duly articulated. Bangladesh Army continuously pursues development and modernization of its outfits which necessitate research and evaluation by professionals. Human resource management and the overriding importance of current issues sometimes put barriers to undertaking research works during policy formulation. Besides, the influence of hierarchical preferences may work as a constraint during such discourses. As such, Bangladesh Army may take a step forward to integrate think tanks in the policy formulation process.

Think tanks' contribution to Bangladesh Army is considered to bring dynamism in the policy formulation process. It may work as a counterweight to register better and durable outcomes during such endeavour. Think tanks are not considered as parallel or alternative to the existing structure of military practices. These think tanks will offer leadership with alternative perspective or higher rationale for accepting or regretting the options presented. Rehabilitation of renowned retired army professionals within think tank organizations may be considered as a noble effort. This may lead to cache benefits from their vast experiences and knowledge. The existing culture of losing retired military professionals overnight may need special attention. AHQ may undertake further study/research to evaluate the possibility of this type of rehabilitation. This would also encourage the retired military community to invest in creating more think tank organizations which would instill a cultural shift in military society. Bangladesh Army may integrate a think tank wing with the existing ARTDOC organogram to conduct feasibility for the next five years and subsequently an independent think tank may be raised at a later stage. The roles, functions and regulatory arrangement for think tanks need detail study. The organizational command climate of Bangladesh Army must always be respected first during such integration efforts. However, military orthodox practices may need similar adaptation for greater benefit. Decision making process should not be influenced by hierarchical preferences. The preconditions for the success of think tanks must be maintained and their research undertakings must be honoured for the benefit of the organization.

Recommendations

Based on the study, following recommendations may be validated at appropriate level through further study:

- a. A think tank organization may be raised under ARTDOC with five years perspective plan. After necessary validation, the organization may be allowed to function independently.
- b. Preference of employing the retired military officers will ensure dignified rehabilitation of these esteemed professionals.

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CONTRIBUTION OF BANGLADESH ARMY IN ENSURING NATIONAL FOOD SECURITY THROUGH SWARNO DWEEP- AN AGRICULTURAL MARVEL IN MAKING

Colonel Mohammad Nawroz Nichoshier, psc, g

*"It's my request to you all to cultivate every inch of arable land."*¹

- Sheikh Hasina, Honourable Prime Minister

Abstract

Swarno Dweep (SRD) is an island in the estuary of River Meghna under the Hatiya Upazila of Noakhali district. Starting to rise in 1960, SRD surfaced completely by 1978 to a height of 3 metres above sea level. Initially, it was known as Jahajjar Char (a vernacular i.e. Island of Ships). Land grabbers and pirates have used this island as a safe sanctuary for their unlawful activities. In 2013, Bangladesh government handed over SRD to Bangladesh Army to utilize it for training and afforestation². Besides training, Bangladesh Army is implementing many agricultural development projects like cultivation of paddy, pisciculture and livestock farming in SRD. The local farmers around SRD have shown keen interest in joining the army effort to make SRD a granary for Bangladesh. Interview with concerned experts, soil test results and in-depth study of the land and weather of SRD have indicated immense possibilities of agriculture in SRD. Bangladesh Army will be able to contribute significantly in ensuring food security through these agricultural projects in SRD.

Keywords: Swarno Dweep, agriculture, food security, pisciculture, Adhoc Military Farm, artificial insemination, bathan, contract farming, afforestation.

Introduction

Bangladesh is a small country with only 0.148 million square kilometres but it has a huge population to feed. Despite the unprecedented development in recent past in agricultural sector, arable land is shrinking day by day. Feeling the need for utmost use of available land to ensure food security, Honourable Prime Minister Sheikh Hasina has called upon the nation to make the best use of every inch of arable land. Being the "People's Army" of our beloved Father of the Nation Bangabandhu Sheikh Mujibur Rahman, Bangladesh Army is answering to this call by using every inch of its arable land for agriculture.

¹ "Cultivate every inch of land: PM", available at: <https://bdnews24.com/bangladesh/cultivate-every-inch-of-land-pm>, accessed on: January, 24, 2022.

² Bangladesh Gazette number 46, 14 November, 2013.

Bangladesh Army has already turned the fallow lands of all of its cantonments into arable lands. From the year 2022, an 'Inter Area Agro Product Competition' has been introduced to encourage the members of Bangladesh Army to use fallow lands for agricultural production. With a vast stretch of 8654 acres of plain land available for agriculture and pasture, SRD has opened up a new horizon of unlimited prospects for agriculture. To utilize these prospects, Bangladesh Army has taken initiatives to implement a number of agronomical projects like cultivation of paddy, pisciculture, livestock farming, poultry farming and afforestation.

Cultivating crops like maize, water melon and peanuts on a trial basis has also given encouraging results. Research on agriculture of coastal islands, interview with concerned experts, soil test results and in-depth study of the land and weather of SRD have also indicated immense possibilities for agriculture in SRD. Locals around SRD are marginal farmers who also have shown keen interest in joining the army effort to make SRD a granary for Bangladesh. The world food market is currently unstable due to various geopolitical events worldwide. There is no other alternative to growing more food to achieve self-sufficiency. In doing so, SRD may play a vital role in increasing food production and ensuring food security for Bangladesh.

Against this backdrop, this paper primarily focuses on the agricultural prospects of SRD. In doing so, SRD will be oriented first with a short recount of its geographical structure and weather related to agriculture. After that, on-going agronomic projects being implemented by Bangladesh Army and planned projects as per the master plan will be discussed. Later, a five-year agronomical perspective plan of SRD with challenges and probable remedies will be discussed in detail. Finally, this paper will put forward a few recommendations to transform SRD into an 'Agricultural Marvel' for contributing to national food security. State-of-the-art training facilities and enormous prospects of training for Bangladesh Army at SRD have been kept out of the purview of this paper.

An Orientation with SRD

In 2013, Bangladesh government handed over SRD to Bangladesh Army³ to utilize it for training and afforestation. SRD lies about 4 km to the south of the mainland of Noakhali district. The entire area of the island is about 392 square kilometres.⁴ The entire island is made up of plain land. Its soil is alluvial with high salinity and low organic substances⁵. During the wet season, i.e from April to October, the maximum land area of SRD remains submerged. However, it rises from submergence and remains dry from November to March. Several canals have crisscrossed the island. The water level varies from 2-3 metres during tide and web. Northwest part of the island is covered by the dense forest of 'Nona- Jhau' tree. Wild buffaloes, foxes and snakes are the main habitants of this forest. Thousands of birds, mostly stork and doves are available on the island.

³ Bangladesh Gazette number 46, 14 November, 2013.

⁴ Surveyor General of Bangladesh, Land Mass of Bangladesh, 2015.

⁵ Soil Test Report of SRD by Noakhali Agricultural Office date 20 March, 2019.

There are 31 Bathans (cattle/buffalo/sheep farm) owned by locals with thousands of animals. The island has several natural lakes filled with various types of fishes. With all these, the island has significant biodiversity⁶.

Photo-1: Location and Area of SRD



Source: Author's Own Collection

Since taken over by Bangladesh Army, SRD has seen some magical progress in infrastructural development. The 6 kilometre Herring Bone road passing through almost the centre of the area from North-West to South-East forms the main artery of road communication in SRD. There is a telecommunication tower of Grameen Phone in SRD, which provides a cellular network on the island. Army also has its dedicated Radio Relay Tower to communicate with Cumilla Cantonment. Bangladesh Army has built a trawler named ‘Swarnotori’ to link the island with the mainland. Bangladesh Army has also built three cyclone shelters. These are three-storied buildings that provide shelter to the locals as well as the members of Bangladesh Army stationed at SRD during cyclones. In addition, construction of a 31 bedded hospital is almost completed by Ministry of Health.

Agronomical Projects being Implemented by Bangladesh Army

A wide range of agronomic projects are being implemented in SRD by Bangladesh Army. The government of Bangladesh, Bangladesh Army and Bangladesh Climate Change Trust Fund⁷ are the entities funding these projects.

⁶ Reconnaissance report of Task Force, 33 Infantry Division, 2013.

⁷ <http://www.bcct.gov.bd/> accessed on 5 October 2021.

Photo -2: Agronomical Projects being Implemented by Bangladesh Army



Source: Author's Own Collection

Adhoc Military Farm, SRD. Adhoc Military Farm, SRD started its journey on 12 March 2014 as an extension of Military Farm, Cumilla. Since then, it has been acting as the hub of all agronomical developments in SRD. Farming of buffalo and sheep is their primary objective. Presently, there are about 400 buffaloes of native breed. Beside buffaloes, there are around 200 sheep of native breed. The farm is also rearing a few cows to test the feasibility of cow farming in a saline environment. There are around 2000 ducks of Khaki Campbell and Beijing breed. There are almost 500 pigeons of Siraji, Jalali and Giribaz breed. Their breeding rate is very encouraging. The farm is also raising few turkey and grey francolin on trial basis. There are total 13 ponds with a total area of 26 acres. Extensive pisciculture is being conducted in these ponds. Common Carp, Tilapia, Pangas and Sea bass are the main species of fishes being cultivated. Extensive rice cultivation is going on by the local contract farmers under supervision of Military Farm. The farm cultivated 3 acres of maize last year. The yield was very encouraging. It also cultivated a small amount of watermelon, peanut, sweet potato and onion. Except onion, others have shown strong possibilities of high yield. Onion cannot grow in the highly saline soil of SRD.

Coconut Gardening. One thousand four hundred fifty saplings of Vietnamese high yield coconut⁸ were planted in SRD in December 2016. The size of the garden is 11 acres. It is a project of Taka 4 crore funded by "Bangladesh Climate Change Trust Fund". Yield is expected from the year 2023. Eminent agriculturist Mr Mehedi Masud⁹ has expressed his optimism about a good yield soon.

Afforestation (Mangrove and Non-Mangrove). One of the prime reasons for allotting the SRD to Bangladesh Army is afforestation and maintenance of ecological balance. Bangladesh Army has implemented an afforestation project of Taka 2 crores funded by Bangladesh Climate Change Trust Fund. Honourable Prime Minister Sheikh Hasina inaugurated the project on 23 January 2020. So far, eight hundred hectares of land has been planted with 2000 kgs of Keora seeds through the 'Seed Bombing' method using helicopters of Army Aviation. Besides, a considerable number of various non-mangrove trees have been planted around the camps and other installations of SRD.

Development Activities Enumerated in Master Plan

A master plan has been prepared for the overall development of SRD. The board formed to prepare the master plan has proposed the following socio-economic development projects for SRD:

Buffalo Farm. Adhoc Military Farm is already established in SRD. A considerable number of buffaloes may be reared in SRD. A rotational grazing field cultivating saline resistant grass needs to be developed for this farm.¹⁰ This farm will supply milk and meat which may help to fulfil the requirement of the Army.

Sheep cum Pigeon Integrated Farm. At present, Adhoc Military Farm, SRD is farming many sheep and pigeons. Sheep are well conversant with the harsh environment of SRD and may be reared in large numbers. This farm will be able to fulfil the mutton requirement of Bangladesh Army. Pigeons will be able to live off the land and from the scratches of cattle feeds. Two hundred fifty locals will have job opportunities in this farm.

Duck cum Fish Integrated Farm. Integrated farm of duck and fish has a perfect future in SRD.¹¹ They will complement each other's growth. Natural food grows in abundance for ducks in ponds and lakes of SRD. Low lying areas may be excavated to dig more ponds. A considerable amount of fish demand of Bangladesh Army may be fulfilled from SRD.¹²

Cow Fattening and Cattle Development Farm. This will be an organised modern farm. There will be fattening of the male calves for meat and rearing of dairy cattle for milk

⁸ <https://www.daily-sun.com/post/266873/Short-variety-coconut-plants-yield-4-times-higher>, accessed on 25 December, 2021.

⁹ Dr Mehedi Masud, Project Director, "Round the Year Fruit Project", Ministry of Agriculture, People's Republic of Bangladesh. Interviewed on 20 October 2021.

¹⁰ Md Faisal Kabir, Soil Scientist, Bangladesh Agricultural Research Institute, Noakhali. Interviewed on 02 November 2021.

¹¹ Md Shahidul Islam, Upazila Agriculture Officer, Shubornochar Upazila, Noakhali. Interviewed on 02 November 2021.

¹² Master Plan of SRD, Prepared by a Board of Officers, 33 Infantry Division.

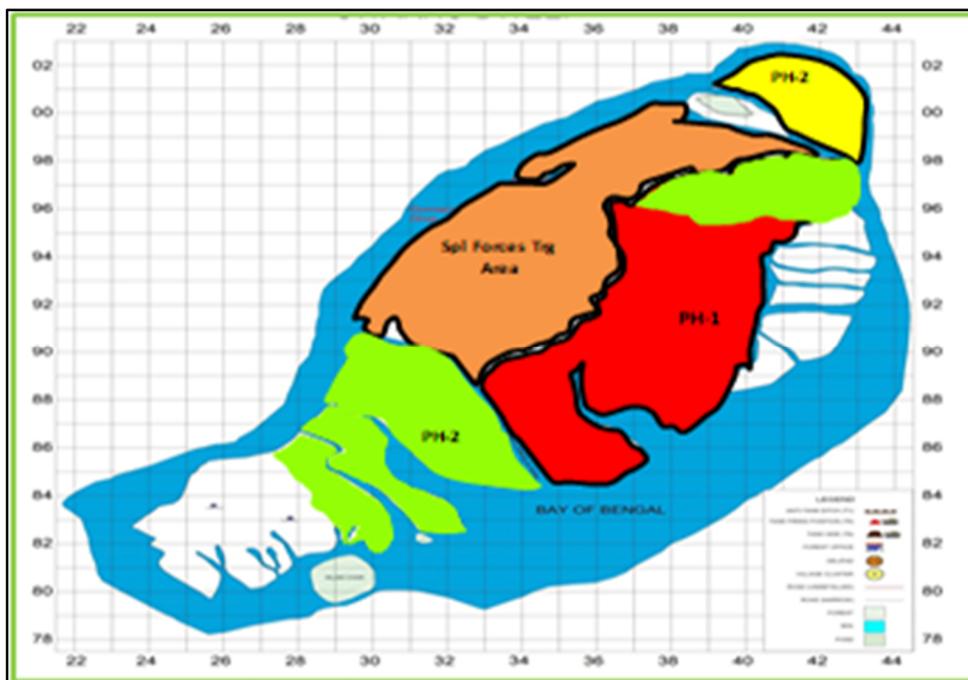
production. Male calves will be collected from different military farms. The animal will be reared by intensive and semi-intensive methods. Different animal research works like effective artificial insemination of cattle, oestrus synchronization of sheep and buffaloes, multiple ovulations, grading up, breed development, hybrid fodder development etc. will be carried out in this farm.

Crop Cultivation. At present, 1100 acres of land is being used for cultivating rice. Many landless and marginal farmers from the coastal areas can be associated with this rice production project. This project can provide a considerable amount of rice to Bangladesh Army. Officer in Charge of Military Farm, SRD may be given the responsibility of all agricultural projects taken in SRD.

Proposed 5 Years Perspective Plan for Agricultural Development at SRD

There is a vast potentiality for agriculture in SRD. Besides land earmarked for training, 8654 acres of fertile and plain land lay open for crop cultivation.¹³

Figure-1: Total Land Available for Agriculture (marked in green) =8654 acres



Source: Author's Collection

"It's my request to you all (people) to cultivate every inch of arable land"¹⁴ - to respond to the call of Honourable Prime Minister Sheikh Hasina a five-year prospective plan for agricultural development of SRD was presented to the Chief of Army Staff during his visit to SRD.

¹³ A survey by Division Locating Battery, 33 Infantry Division.

¹⁴ www. BD News24.com, date 14 January 2011.

Photo-3: Chief of Army Staff Visiting Various Agronomical Projects in SRD



Source: Author's Own Collection

Parameters defined in Master Plan, focused group discussion, soil test results, an on-ground study by agricultural experts and inputs of Subject Matter Experts were used for the planning guide to prepare this perspective plan. Salient points of the plan along with the challenges and suggested remedies are appended below:

Buffalo Farming. There is a massive potential for buffalo farming in SRD. There are 25 civil 'Bathans' (where the herd of buffaloes are kept) rearing around 5000 buffaloes of native breed. Murrah breed of buffaloes is a better breed than that of native.¹⁵ Their body weight is 50% more and milk production is 4 times more than that of native breed. Military Farm, SRD, has successfully inseminated some native buffalo with Murrah semen and got a few calves of Murrah breed. Through buying Murrah calf and artificially inseminating the native breed, the whole herd can be upgraded to Murrah breed which will fulfil the requirement of the proposed master plan. A five years perspective plan for Buffalo farming in SRD is appended below:

¹⁵ <https://www.roysfarm.com/murrah-buffalo/>, accessed on 18 November 2021.

Table-1: 5 Years Perspective Plan for Upgrading Buffalo Farming in SRD

Period	Number of Buffalo	New Birth	Buy Murrah Buffalo	Sell Native Buffalo	Total	Required Budget (taka in crore)	Remark
2022	313	53	150	75	441	8.46	By 2026, complete herd will be of Murrah breed
2023	441	75	100	75	541		
2024	541	95	100	75	661		
2025	661	110	0	81	690		
2026	690	119	0	0	809		

Source: Prepared by Author

Shortage of grass in the dry season is a challenge that may be overcome by feeding commercial feed, straw collected from paddy farming and growing saline resistant grass in SRD. A combined research team of Udder Health, Bangladesh¹⁶ and Chottogram Veterinary and Animal Sciences University (CVASU) visited Adhoc Military Farm SRD. After testing, the team certified the buffalo milk produced at SRD to be of excellent quality.

Photo-4: Certificate of Quality for Buffalo Milk Produced at SRD



Source: Collected by Author

¹⁶ Udder Health, Bangladesh is an international initiative with a view to raise awareness on mastitis problem among farmers, cattle owners, rural people who depends on livestock (uhb.org.bd).

Sheep Farming. Sheep can survive in a very harsh weather condition. So there will be no difficulties in sheep farming in SRD. Local Bathans are rearing around 4000 sheep of the indigenous breed. Adhoc Military Farm, SRD has also tested the suitability of sheep farming in SRD. A five years perspective plan for sheep farming in SRD is appended below:

Table-2: Proposed 5 Years Perspective Plan for Sheep Farming

Timeline	Number of Sheep	New Birth	Buy Lamb	Sell Adult Sheep	Total	Required Budget (lacs taka)	Remarks
Existing	137						Military Farm will need additional sheds and staffing
2022	137	30	1000	14	1153	8.5	
2023	1153	260	1000	115	2298	8.6	
2024	2298	517	1000	230	3585	8.7	
2025	3585	806	1000	358	5033	8.8	
2026	5033	1132	-	1164	5000	-	
Herd value= 5000x5000=2.5 crore						34 lacs	

Source: Prepared by Author

Farming of 'Garol', a high meat yielding breed, is also a viable option.¹⁷ The challenges of sheep farming in SRD are the scarcity of grass in the dry season, Hook Worm and Sheep Plague. Feeding straw and commercial feed, regular deworming and vaccination against Plague will help overcome the challenges.

Pisciculture. There are total 15 ponds with an area of 26 acres. Common Carps, Koral and Monosex Tilapia are found suitable for the existing environment of SRD. There is a vast potential to extend the number of ponds and areas for pisciculture in SRD, turning the low lying areas into ponds. Natural lakes which get dried up during the dry season can also be excavated to hold water round the year and used for pisciculture. A five years perspective plan for pisciculture in SRD is projected in Table-3:

¹⁷ Mr Shaykh Siraj, Eminent Agricultural Journalist. Interviewed on 10 November 2021.

Table-3: Proposed 5 Years Perspective Plan for Pisciculture

Serial	Timeline	Pond Area (acres)	Total Yield (Metric Ton)		Cost of Pond Digging (taka in lac)	Remarks
			Monosex Tilapia (2 yield/ Year)	Mixed Culture (Tilapia and Carps)		
1	2022	26	250	225	25*	*Maintenance of existing ponds # Expenditure VS Earning ratio for Tilapia is 35% and Mixed Culture is 45%
2	2023	30	288	259	40	
3	2024	35	336	302	50	
4	2025	40	384	346	50	
5	2026	45	432	389	50	

Source: Prepared by Author

There are a few challenges of pisciculture in SRD. The high salinity of water during the dry season deters the growth of fish.¹⁸ Ponds dry out in the dry season. As the soil is alluvial, dams around the ponds give away under heavy rainfall in the rainy season.

Photo-5: Damage of Dams around the Ponds at SRD under Heavy Rainfall



Source: Author's Collection

¹⁸ Md Nurul Islam, Upozilla Agriculture Officer, Haita Upozilla, Noakhali. Interviewed on 02 November 2021.

To meet the challenges, ponds need to be excavated to 10 feet depth to hold water during summer. In addition, dams around the ponds need to be covered by geo-bags to protect them from being washed away under heavy rainfall.

Duck Farming. There is a vast potentiality of composite fish and duck farming in SRD. However, it can only be done in the wet season as water reduces considerably in the dry season and droppings of ducks will pollute the water. Khaki Campbell, Indian Runner and Beijing breed of ducks have adapted well to the environment of SRD. Beijing breed grows 3.2 kgs in 7 weeks.¹⁹ This breed can be reared two cycles per year in the wet season. A five years perspective plan for integrated duck farming is shown in Table-4:

Table-4: Proposed 5 Years Perspective Plan for Duck Farming

Timeline	Number of Ducks	Cost-Benefit Analysis (taka in lacs)			Budget	Remarks
		Expenditure	Income	Approximate Profit		
						1. Military Farm will rear.
2021	1055	4.22	5.27	1.05	-	2. New duck sheds will incur costs initially.
2022	6000	24	27.5	3.5	25	3. Additional staffs required may be outsourced from profit.
2023	10000	40	46	6		
2024	Will be decided basing on the result of the preceding years.					
2025						
2026						

Source: Prepared by Author

Rice Cultivation. There are 8654 acres of land available for agriculture in SRD. So far, 5000 acres have been brought under cultivation. Local farmers are very hardworking and interested to participate with the army in growing rice on contract farming. The hybrid variety of BRRI-52, Swarna and local varieties called Rajashail grow well in SRD.²⁰

¹⁹ <https://lohmann-breeders.com/lohmanninfo/performance-of-current-pekings-duck-breeds>, accessed on 29 January 2022.

²⁰ Md Nurul Islam, Upozilla Agriculture Officer, Haita Upozilla, Noakhali. Interviewed on 02 November 2021.

Photo-6: Rice Cultivation and Harvesting at SRD



Source: Author's Collection

High soil salinity and low organic material in soil reduce the yield. There is no irrigation system to grow rice in the dry season. So rice can be cultivated in the wet season only. Despite all these challenges, a considerable amount of rice can be added to the national granary if rice cultivation can be done as per the plan proposed in Table-5.

Table-5: Proposed 5 Years Perspective Plan for Rice Cultivation (Contract Farming)

Timeline	Land Cultivated (acres)	Yield /acre (ton)	Total Yield (ton)	Remarks
Cultivation in 2021	1100	0.44	484	1. Contract Farming in wet season only. 2. Production will vary due to weather effects. 3. Farmers will share a nominal amount of the yield with the army. 4. The main objective is to add to the national economy.
Expansion in 2022	5000		2200	
Expansion planned in 2023-2024	Up to 6000		2640	
Expansion planned in 2025-2026	Up to 7000		3080	

Source: Prepared by Author

Maize Cultivation. Maize was cultivated on a trial basis and the yield was satisfactory. If irrigation arrangements can be made, maize can be cultivated in a bulk amount.

Photo-7: Maize Yield at SRD was Satisfactory despite Salinity



Source: Author's Own Collection

Five years perspective plan for maize cultivation is depicted in Table-6.

Table-6: Five Years Perspective Plan for Maize Cultivation:

Cultivation Period	Land Cultivated (acres)	Yield /Acre (Ton)	Total Yield (Ton)	Budget Required (lacs taka)	Remarks
2021	3	1.8 (50% of normal due to excessive salinity)	5.4	-	*Contract Farming in the dry season only. *Contract farmers will pay for irrigation costs. *The main objective is to add to the national economy.
Expansion in 2022	Up to 200	-	360	80 (for 2xdeep tube wells)	
Expansion in 2023-2026	Will be decided basing on the production of 2022				

Source: Prepared by Author

Watermelon and Peanut Cultivation. The soil of SRD has shown possibilities to cultivate watermelon and peanuts. With irrigation, watermelon and peanuts have yielded in massive quantity in test farming. The quality of the yield was also excellent. Local farmers have shown keen interest to cultivate these crops with technical help from the officers of Adhoc Military Farm, SRD.

Photo-8: Watermelon and Peanut Harvesting at SRD



Source: Author's Own Collection

Contribution of SRD in National Agronomy

SRD has already started contributing to uplifting the economic condition of the local farmers. After joining the contract farming model with Bangladesh Army, local farmers were given 5000 acres of land to cultivate rice. Adhoc Military Farm supported them very closely with technical knowledge of modern rice cultivation. The landless marginal farmers yielded bumper rice in the last wet season and were immensely benefitted. A total of 2200 Metric Tons of rice was added to the national granary.

Ponds of SRD supply fresh fish to the soldiers stationed in SRD through the supply contractor. Local Bathans have flourished under the security cover provided by Bangladesh Army. Adhoc Military Farm is cross breeding local buffaloes with hybrid Murrah buffaloes and increasing milk and meat production significantly. The number of buffaloes and sheep has increased manifold in those Bathans. The coconut orchard has started blooming. A huge yield is expected within next 2-3 years. If the proposed master plan is implemented, SRD will be able to contribute significantly to national agronomy in near future. The contribution of these projects to the national economy was acknowledged and highly admired by the Honourable President of the People's Republic of Bangladesh Md Abdul Hamid²¹ and the Honourable Prime Minister of the Government of the People's Republic of Bangladesh, Sheikh Hasina, during their visits to SRD²².

²¹ "Swarno Dweep can be Bangladesh's Singapore": Honourable President Md Abdul Hamid, available at: <https://archive.dhakatribune.com>, accessed on: January, 24, 2022.

²² "Army always ready to stop evil force: PM", available at: <https://www.thedailystar.net/news/bangladesh/news>, accessed on: January, 14, 2022.

Photo 9: Honourable President and Honourable Prime Minister Visiting SRD



Source: Author's Own Collection

Challenges and Ways Forward

To materialise the proposed plan for socio-economic development of SRD, the following are the challenges that need to be negotiated:

High Salinity. Being a coastal island, the soil of SRD suffers from high salinity, especially during the dry season. Salinity reaches up to 29 ds/m²³ whereas the normal salinity level of the soil is 6 ds/m. The layer of salt becomes visible over the landscape.

Photo-10: Layer of Salt over Soil and Soil Test Report of SRD



Source: Collected by the Author

A high salinity level reduces the production of all types of crops.²⁴ The presence of organic matter in soil is also significantly less (<1%). However, during the wet season, heavy rainfall washes away the saline layer of the soil, and land becomes fertile for growing crops.

²³ Soil Test Report by Soil Resources Development Institute, Regional Research Centre, Noakhali, 20 March 2019.

²⁴ <https://www.fao.org/3/r4082e/r4082e08.htm>, Chapter 7.3, Crops and Salinity, accessed on 11 January 2022.

Lack of Irrigation System in Dry Season. There is no irrigation system installed in SRD to support the cultivation during the dry season. Therefore, cultivation is limited to the wet season only. Almost 4000 acres of land remains vacant due to a lack of water for irrigation. So, the full potential of agricultural prospects could not be tapped. A deep tube-well can irrigate 80 acres of land²⁵ and costs around 40 lac taka. Installation of 50 deep tube-wells costing twenty crore taka will mitigate irrigation problem in the dry season. It will also unfold the enormous possibilities of producing all types of crops round the year. The cost involved in installing the pumps can be realised over the years from the profits.

Relocation of Bathans. There are around 25 Bathans scattered all over SRD owned by local civilians.²⁶ These Bathans have almost 5000 buffaloes, 4000 sheep and 1500 cows. These cattle are free to graze anywhere in SRD which have become a deterring factor to crop production. Vast land for grazing is available in the southern part of SRD. These Bathans need to be shifted there for vacating the area for crop production uninterruptedly. Discussion is on to materialise this plan. Owners of the Bathans are also showing a very cooperative attitude in this regard.

Erosion. The north-western bank of SRD is threatened by erosion. Due to the water flow in and around SRD from east and west of Caring Channel / Mampur Khal, this portion of the island is getting eroded fast.

Photo-11: Erosion Turns Severe at Monsoon along North Eastern Part of SRD



Source: Author's Own Collection

There is a need for taking measures to stop river erosion. A project has been taken, and it is being implemented. Erosion needs to be stopped prior to constructing dikes on the island. MIST has already proposed constructing a dike/embankment around the island and they have put forward their proposals.²⁷ These proposals are under active consideration by the concerned authority of the government.

²⁵ Dr Obaedullah Kaisar, Principal Scientific Officer, Regional Agricultural Research Station, Cumilla. Interviewed on 30 July 2021.

²⁶ A survey carried out by Task Force of 33 Infantry Division, November 2021.

²⁷ Presentation given to Ministry of Water Resources by Colonel Kabir, Bangladesh Army on 30 July 2020.

“Swarno Dweep will Resonate Itself” : Distinguished Agronomist Shykh Seraj

Distinguished journalist, media personality and agronomist Shykh Seraj²⁸ visited SRD on 10 November 2021. He visited all the agronomical projects of SRD and had an interview of CAS.

Photo-12: Shykh Seraj interviewing Chief of Army Staff in SRD



Source: Author's Own Collection

During an interaction session with the author, he expressed his deep satisfaction about the helms of agricultural affairs run by Bangladesh Army in SRD. He gave his expert opinion on the cultivation of tomatoes and eggplants in SRD. He advised growing high protein enriched ‘Black Soldier Fly’²⁹ for making fish feed at a low cost. He also shared his experience of branding and marketing "Organic Crops"³⁰ which will be produced in SRD at a good price in super shops. He was very optimistic about the future of agriculture in SRD.

Recommendations

Given the above study and propositions, the following recommendations are made for the consideration of the competent authority:

- a. A research unit of the agricultural department may be stationed at SRD. This unit may find out the variety of crops suitable for cultivation in the saline environment of SRD.
- b. Necessary measures may be taken to bring the 8654 acres of cultivable land of SRD under an integrated irrigation system.
- c. All Bathans may be shifted to southern part of the island to protect the crops from buffaloes. These endeavours will allow tapping the full agricultural potential of SRD.
- d. To protect SRD from withering away from the map by erosion, necessary measures may be taken to construct cross dams/dikes as per the suggestions of subject matter experts.

²⁸ <https://www.thedailystar.net/author/shykh-seraj>, accessed on 4 November, 2021.

²⁹ <https://www.rockefellerfoundation.org/case-study/black-soldier-flies-inexpensive-and-sustainable-source-for-animal-feed/> accessed on 17 January 2022.

³⁰ <https://www.britannica.com/topic/organic-farming> , accessed on 24 December, 2021.

Conclusion

Bangladesh Army is the pride of our nation. Keeping training the prime focus, it also carries out numerous nation-building activities. Honourable Prime Minister has called upon the whole nation not to keep an inch of cultivable land vacant. She has urged all to make the best use of the land available for agriculture. To answer the call of our Honourable Prime Minister, the respected Chief of Army Staff has introduced the 'Inter-Area Agro production Competition' to ensure the best use of arable lands in all the cantonments.

Keeping aside required land for training, SRD has a vast stretch of plain land available for agriculture and pasture. Cultivation of various crops on a trial basis has given an encouraging result. Paddy cultivation has reached 1100 acres by 2021 and is expected to reach 2000 by this year. Cultivation of other crops like Maize, Watermelon and Peanut is getting momentum. Since its inception, buffaloes are reared in SRD in numbers. There are vast potentialities of sheep farming and fish cum duck integrated farming in SRD. Adhoc Military Farm is doing a commendable job by integrating local farmers with all agronomical projects in SRD and helping them with the latest technological know-how.

Salinity is the main challenge to fostering agriculture in SRD. Due to heavy salinity during the dry season, the yield in SRD is lower than that of mainland Bangladesh. As such, saline-resistant crops are to be cultivated in SRD. The wet season is to be targeted for the primary yield of the year as an irrigation system is not available in SRD. Investment in irrigation will be cost-effective as sale proceeds from the production will realize the investment soon. In addition, erosion control of the island is to be given due importance for its existence. With all stakeholders' devoted and coordinated hard work, turning "Swarno Dweep" into an "Agricultural Marvel" will be a tribute to the call of our Honourable Prime Minister Sheikh Hasina to grow more food and ensure national food security.

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‘QUALITY EDUCATION’ - THE LEITMOTIF OF PEDAGOGY RHETORIC: HISTORY, CHALLENGES AND MEASURES FOR BANGLADESH ARMY RUN EDUCATIONAL INSTITUTIONS

Lieutenant Colonel Khondoker Farooque Hossain, PhD, AEC

“Education must fully assume its central role in helping people to forge more just, peaceful and tolerant societies”.

— Ban Ki-Moon

Abstract

Quality education has become a slogan for child education across the world. Nowadays, most of the army run schools and colleges in Bangladesh have been rated as ‘high-performing institutions’ because of the quality education rendered by the institutions. This paper is a particular focus on understanding of pedagogy and its origin in Bangladesh Army. The concept of education service has been traced back in British Imperial Army which has been inherited by East India Company Army and subsequently by British Indian Army. The paper also identifies quality education for children that are being imparted in Bangladesh Army run schools and colleges under the directives of army leadership. This study however, aims further at showcasing the challenges of imparting quality education that meets the human, social, community or country needs. Furthermore, this paper seeks to highlight some measures and recommendations to provide quality education basing on the perspective of Bangladesh Army administered Cantonment Public Schools and Colleges (CPSC) and English Medium School and Colleges (EMSC).

Keywords: Quality Education, Cantonment Public Schools and Colleges (CPSC), English Medium Schools and Colleges (EMSC), pedagogy, education service, high-performing institutions.

Introduction

The United Nations (UN) has ratified ‘Quality Education’ as one of its most important goals for every nation to ensure “global prosperity, protection of the planet and eradication of poverty”. Some critics argue that the threshold of quality education is met by achieving good result in public examinations and performing well in co-curricular activities only. But quality education is not simply a result-oriented education system; rather, it is a system designed to prepare all students for higher studies in their respective field of interest and reach their full potential and enter the society as full and productive citizens.

The education system in Bangladesh has made great strides in escalating access to education in the present decade but surprisingly the educational quality remains stumpy¹. The poor state of education in Bangladesh is plagued by inadequate resources, insufficient and unqualified teachers, and a lack of community involvement. However, Bangladesh Army administered secondary and higher secondary educational institutions enjoy little improved state of education

¹ Professor Dr. Jasim Uddin. Interview, Jahangirnagar University, Savar, Dhaka, Dated 26 September, 2022.

system due to extra care and better administration which has been inherited from the tradition of British Army and British-Indian Army.

Bangladesh Army, being the part of the society, has been contributing significantly in many sectors for societal and national development. The Education sector is one of the much applauded sectors which have gained credence both in the army and civil society. There are remarkable numbers of army-run educational institutions ranging from kindergarten to universities. In addition to general education at university level, educations in medical and engineering disciplines are also imparted. For secondary /higher secondary level education, Cantonment Public Schools and Colleges, English Medium Schools and Colleges and Cantonment Board Schools and Colleges are inducting considerable number of military and civil wards each year. Alongside, few kindergartens are also operating for pre-primary education in different cantonments. However, the prime focus everywhere is the ‘Quality Education’.

Generations are built on the foundation of quality education and nations are built on quality education (Huda et al., 2009). Ever since ‘Quality Education’ has become the leitmotif of pedagogy rhetoric, both at the international and national levels, Bangladesh Army administered Cantonment Public Schools and Colleges (CPSC) and English Medium Schools and Colleges (EMSC) are striving hard to provide best quality education to the students². With the decade long experience and observations in the process of administering a considerable number of institutions, it has been a strong apprehension to the authority that the most essential ingredient of quality education is the quality of the teachers. Another equally prime concern is that the overall teaching standard in the remote cantonments, is low or very low. How then to conceive of and achieve quality education? Due to inadequate infrastructure and the revolution of technologies in information and communication, other issues in teaching quality are also emerging.

Under this context what effective measures can be taken to escape from result oriented content delivery and thereby ensuring knowledge based education? Can there be a Corps of Schoolmistresses in the fashion of British Army to ensure the availability of quality teachers? Additionally, there are also issues like inadequate vacancy for new admission, teacher-student ratio, private tuition, commercial coaching, etcetera. These and other related questions will be succinctly addressed in the relevant part of this study through peeping into the history of the education system inherited from the British colonial army and the system in vogue in Bangladesh Army at present.

Methodology of the Study

The methodology of this study is essentially analytical in nature. Both primary and secondary data have been used for this study. Books, journals, newspapers and published articles have been accessed to make this article informative and descriptive. A wide variety of relevant literatures about education system/service in Bangladesh Army which is borrowed from the British Colonial Army, Royal British Army and Post-Colonial Army have been perused to find out historical data. Interviews of selected persons have also been conducted randomly to substantiate the ideas put forth in the paper.

² Brigadier General Sharif (retd), Interview with the author, Dhaka, 16 June 2022.

Limitations of the Study

Pedagogy refers to the education of any person below the age of eighteen. Thus, the purview of this study will remain confined up to the secondary level of education in CPSC and EMSC excluding the cadet colleges. Higher education in universities, medical colleges and engineering institutes are not included in the discussion due to limiting the scope of this study.

PART I

Brief Historical Overview of Pedagogy in the Colonial, Royal British and British-Indian Army

*"You talk o' better pay for us,
An' schools, an' fires, an' all;
We'll wait for extra rations
If you'll treat us rational."*

-----Rudyard Kipling

These lines by Rudyard Kipling in 1892 manifest the demand for education of the soldiers in the British Army. The British maintained a long-established tradition of offering education to both soldiers and their children through Regimental and Garrison schools established in the mid-seventeenth century. To meet the need of education, on 2 July 1845 the Corps of Army Schoolmasters was formed, staffed by warrant officers and senior non-commissioned officers, as well as a few commissioned officers. Under the remit of the Adjutant-General, they were put in charge of the Army's libraries and children's schools alongside the responsibility of soldiers' education. A Royal Warrant established the **Royal Army Educational Corps (RAEC)** on 15 June 1920 for the better conduct of educational activities in British Army. Figure-1 displays the cap badge of the then RAEC.

Figure-1: Cap Badge of Royal Army Education Corps



Source: Author's Own Collection

Queen's Army Schoolmistresses

The **Army Schoolmistresses** formed in 1848 were known as female military school teachers³ engaged in teaching the soldiers and their children in British Army garrison schools.⁴ In 1863, a good number of Schoolmistresses and Pupil Teachers (monitresses) and Assistant Schoolmistresses were appointed by the British Army. In 1865 there were 443 female teachers including 209 trained Army Schoolmistresses. According to Howard R. Clarke (2010), a report in 1872-3 by the Inspector General of Schools, reveals that there were 238 trained and qualified schoolmistresses, 55 acting schoolmistresses, 66 pupil teachers and 336 monitresses. **Army Schoolmistresses** received the "Queen's" prefix in 1928. These schoolmistresses used to teach away from home even to the distant colonial schools in Jamaica, Africa and India. Army Children Schools in the UK were handed over to the civilian authority in 1946 and the Queens Army Schoolmistresses (QAS) were declined to zero by the year 1970.

Colonial Period

In the beginning some of the British Regiments had brought the sergeants, as 'The School Master', along with them for the purpose of imparting education to the troops and their children. The Company's European troops made a similar provision of educational facilities for them and their children. Few schools were opened in 1856 in the three presidencies of Calcutta, Bombay and Madras. Later, Army School of Education was established at Panchmari in 1921.

With a view to mitigating the overwhelming rate of illiteracy among the Indian troops and their families, the Governor General sanctioned the formation of a new corps designated as the Indian Army Educational Corps (AEC) with effect from 01 Jun 1947. The Corps was authorized with 80 officers of the regular cadre, 120 Viceroy's Commissioned Officers and 400 Indian Other Ranks dedicated to providing education service to the troops and their children.

Post-Colonial Period

The Mission of the Pakistan Army Education Corps, established in 1951, was to contribute towards combat efficiency including education of the military wards. However, the overall scenario of the education service by the government and Pakistan Army in East Pakistan was frustrating. Quazi Faruque Ahmed⁵ (2009) argues that since the establishment of Pakistan, anarchy in the

³ Gibson, Clare (2012). *Army Childhood: British Army Children's Lives and Times*. Bloomsbury Publishing. p. 38. ISBN 9780747811244.

⁴ UK, National Archives. "Temporary Queen's Army Schoolmistresses". discovery.nationalarchives.gov.uk. Retrieved 11 July 2022.

⁵ Prof. Quazi Faruque Ahmed was one of the organisers of the '62 education movement and is a member of the National Education Policy Formulation Committee 2009, and Chief Coordinator, National Front of Teachers & Employees (NFTE), Bangladesh.

education sector was a common feature. The central government showed a step-motherly attitude towards East Pakistan in all sectors.⁶ Prior to partition, East Pakistan was much ahead of the then western part of Pakistan in education sector.⁷ Pakistan army also refrained from expansion of education services for both military and civilian in East Pakistan. There were few cantonment based educational institutions which were insufficient compared to the requirement. Naturally, the question of quality education did not appear then.

Pedagogy in the Army in Post Liberation Era

Bangladesh got independence under the leadership of the great leader Bangabandhu Sheikh Mujibur Rahman in 1971. The Father of the Nation well perceived the need for education for the people of the country. He gave special emphasis on pedagogy in the constitution. Bangladesh Army was also reorganized under his leadership and since independence Army run educational institutions are making all out efforts in imparting quality education. Alongside the traditional role of giving education to the soldiers, Army Education Corps has been primarily bestowed with the responsibility of running these educational institutions.

At present, officers of all arms and services of Bangladesh Army are involved in offering comprehensive and effective education services in the country through which education is imparted to more than two lac students from both military and civil society. For pedagogy, there are Cantonment Public Schools and Colleges; Cantonment Board Schools, English Medium Schools and Colleges and Cadet Colleges across the country. Additionally, Bangladesh Army has facilitated education for children with special needs under the banner of 'Proyash'.

PART II

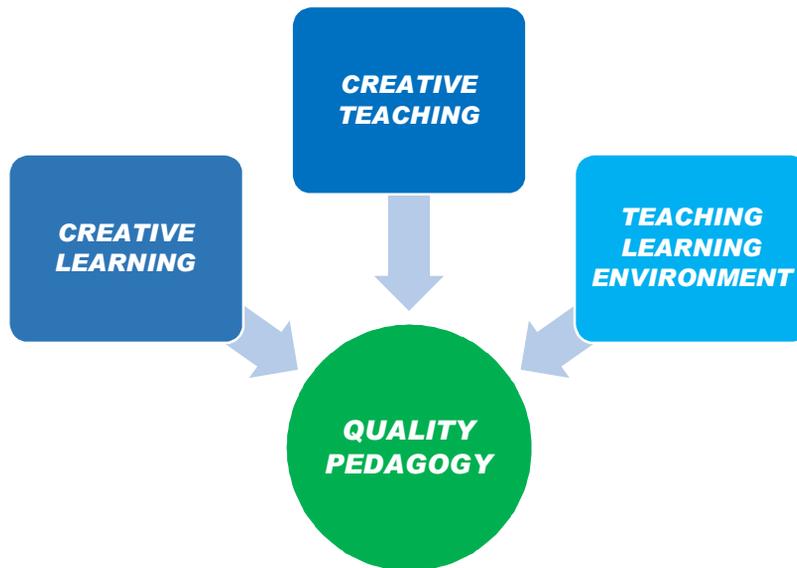
What is Pedagogy?

Pedagogy is commonly known as the method of teaching by teachers in theoretical and practical classes. Pedagogy is formed by a teacher's teaching styles, beliefs, ideology and concerns that interplay among the different ways to learn. A 'Meaningful Classroom' is a prerequisite for pedagogy that helps a student to build their learning habit. The study of teaching approaches and how it affects the students learning is also known as Pedagogy. Figure-2 depicts three major components of quality pedagogy.

⁶ The Daily Star, 16 September 2009, Dhaka.

⁷ Education Movement 1962: Unresolved Question of Inequality in Education; Nahid Riyasad, The New Age, Sep 23,2018.

Figure-2: Three Major Components of Quality Pedagogy



Source: Author's Own Construct

Pedagogy is being practiced throughout the world. What must be remembered is that pedagogy in the context of institutional education mostly relates to the education of children. These child students group may comprise children, adolescents and teens. However, they all are considered as child since anyone under the age of 18 is considered as ‘child’ according to the definition of child set by UNESCO.⁸

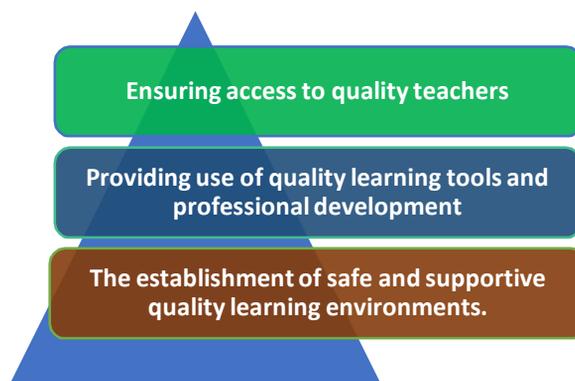
The Concept of Quality Education

In the new millennium, the concept of quality education has emerged with new dynamics and wider dimensions in Bangladesh’s education sector. A ‘Quality Education’ is not one that is measured purely by examination score. International organizations have defined quality education as “one that focuses on the whole child-the social, emotional, mental, physical, and cognitive development of each student regardless of gender, race, ethnicity, socio-economic status, or geographic location. It prepares the child for life, not just for examinations”.

Quality in education is usually supported by three key pillars. Figure-3 elaborates the idea further.

Figure-3: Three Key Pillars of Quality Education

⁸ Rathus SA (2013). Childhood and Adolescence: Voyages in Development. Cengage Learning. p. 48. ISBN 978-1-285-67759-0.



Source: Author's Own Construct

A quality education, in its broadest definition, offers resources and directs policy to guarantee that every kid enters school in good health, learns about and follows a healthy lifestyle, and learns in a setting that is physically and emotionally safe for students, teachers, and parents. He or she is challenged academically, ready for success in higher study, for employment, and participation in a national or global environment. He or she is actively engaged in learning, connected to the school and the larger community, has access to personalized learning, and is supported by knowledgeable and caring adults.

Quality Education and the Role of Army Run Institution

Mahatma Gandhi once stated, “*The military virtues of the loyalty, unity, discipline and efficiency it possesses should be exploited during peace time and the military establishment should be employed for the constructive, economic and social programs*”. In view of this philosophy, Bangladesh Army, being the role model to the people of Bangladesh, has taken the challenge of imparting quality education in pedagogy conforming to the national policy.

Contribution of Bangladesh Army in Education Sector

Bangladesh Army has made remarkable success in achieving the expected standard the nation asked for. The role of Bangladesh Army in the education sector through its conglomerate educational institutions across the country is the manifestation of its dedication and commitment to any assigned or attempted task. The aspiration of getting educated in Bangladesh army run educational institutions of any level of studies is dramatically climbing over the years. The important part played by Bangladesh Army, directed to contribute and enhance the progress of educating and building the nation, is well applauded in both military and civil society. Table-1 will further depict the wider role of Bangladesh Army in education sector:

Table-1: Statistics of Pedagogy and Andragogy in Army Run Educational Institution

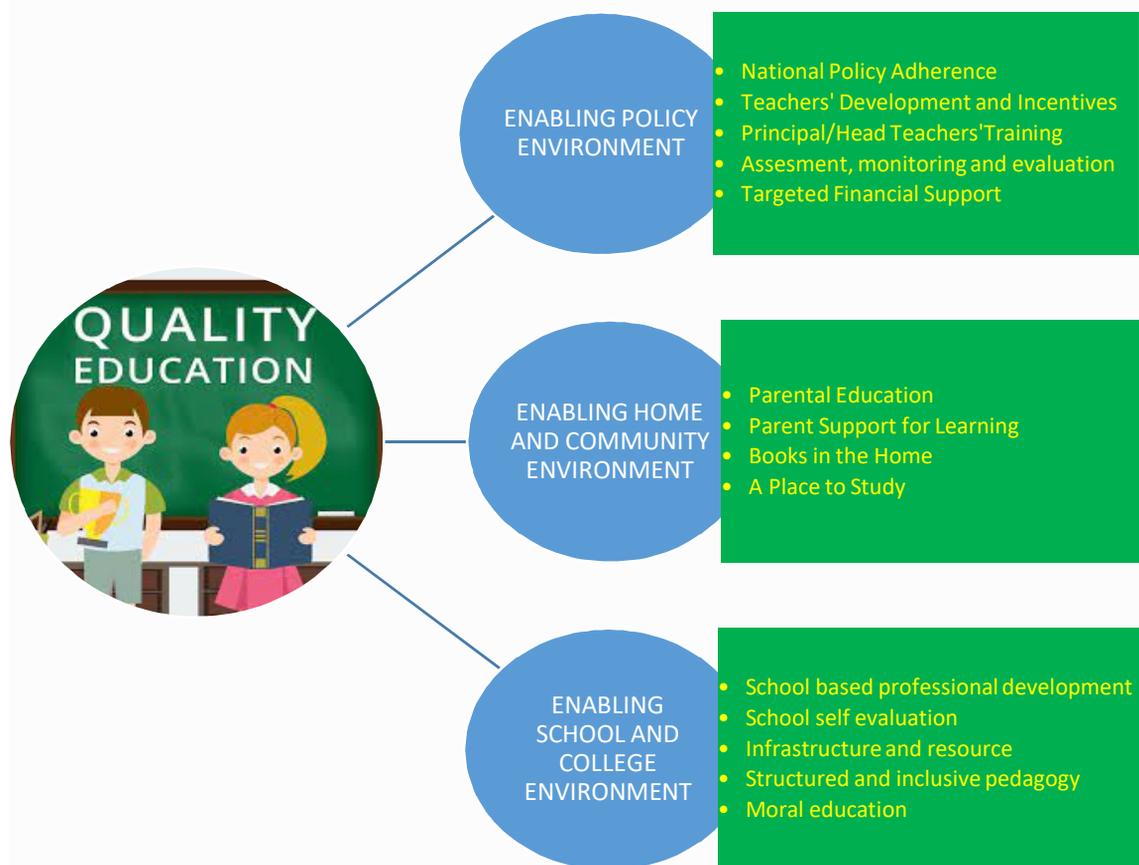
Serial No	Category of Educational Institution	Statistics of Teachers	Statistics of Civil Officers/ Employee	Statistics of Students
1.	Cantonment Public & English Medium School and College (57)	4,092	3,097	1,30,054
2.	Cadet College (12)	392	1,886	3,690
3.	Cantonment Board School and College (38)	1,171	1,473	46,773
4.	Specialised Educational Institution, Proyash (12)	347	229	1,885
Total		6,002	6,685	1,82,402
5.	Armed Forces & Army Medical and Nursing College (06+02)=08	411	822	2,432
6.	Bangladesh University of Professionals (BUP)	190	858	9,119
7.	Military Institute of Science and Technology (MIST), Mirpur	590	1,658	14,687
8.	Bangladesh Army University of Engineering and Technology (BAUST), Syedpur			
9.	Bangladesh Army University of Engineering and Technology (BAUST), Quadirabad			
10.	Bangladesh Army International University of Engineering and Technology (BAIUST), Cumilla			
11.	Army Institute of Business Administration, Savar			
12.	Army Institute of Business Administration, Sylhet			
Total		1,191	3,338	26,238
Grand Total		7,193	10,023	2,08,640

Source: Author's Own Construct (Data collected from various institutions)

Senior Leadership's Directives for Quality Education

The senior leadership of Bangladesh Army has well recognized the need for quality education in army run educational institutions. They have relentlessly patronized education for children of both military and civil society and thereby it would not be an exaggeration to recognize them as the 'connoisseur' of education. The senior leadership believes that educational institutions run by Bangladesh Army have significant role in developing and reflecting the overall image of Bangladesh Army. Therefore, all the institutions must maintain the standard by imparting quality education and holistically performing the sacred responsibility of teaching to the students. To implement the leadership's directives, Quality Education Model as depicted in Figure-4 may be followed.

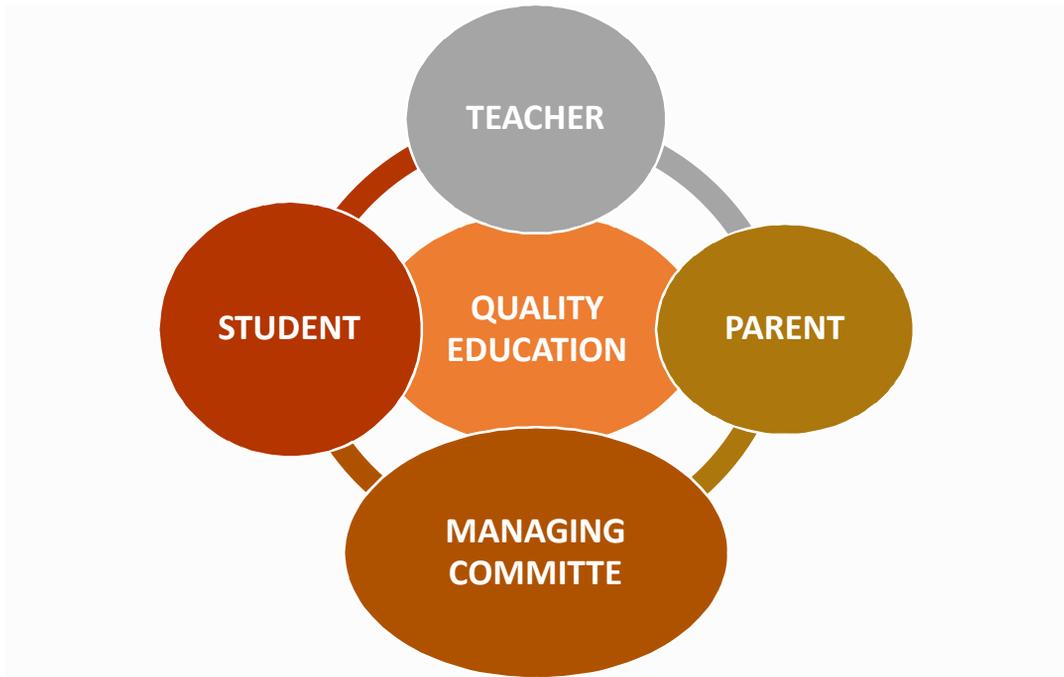
Figure-4: Quality Education Model for Army Run Pedagogy



Source: Author's Self Construct

The leaders further believe that quality education and institutional success do not depend on any single entity. Teachers, students, parents and the managing committee need to have their due share for overall achievement. Figure-5 demonstrates the intertwined connection among these components.

Figure-5: Four components of Quality Education



Source: Author's Own Construct

The senior leaderships' philosophy for quality education in CPSC and EMSC may be summarized as follows:

- a. The students with comparatively low performance should be taken care of and the focus of the teachers should befall on them.
- b. All the activities of the students must be monitored. In this regard, the Principal as well as the teachers must interact with the guardians at frequent intervals.
- c. Students must be groomed in proper ways and they should be instilled good habits. Students need to be nurtured with core values so that they can excel in life and contribute to the society and nation as well.
- d. In addition to regular lessons, the class teacher must motivate students on moral, ethical and social values and also make the students knowledgeable about various ongoing issues, national and international news and general knowledge.
- e. Congenial teaching-learning environment must prevail in the school/colleges so that the students are attracted to attend the classes.
- f. The latent talent and decent human qualities of the students need to be nurtured through their spontaneous participation in co-curricular activities.

g. Students should follow the religious values of their respective religions. However, the students need to be monitored so that they do not become the prey of religious extremism.

h. The students must be developed physically and mentally by ensuring adequate facilities for games and sports in the institutions.

Outcome of Leadership Directives in CPSCs and EMSCs

Army run educational institutions have absorbed these directives in their constitutions and these are adhered to by all stake-holders of the institutions. The CPSC and the EMSC are well run by the local governing body composed of both army and civil representatives patronized by the respective Area Commander. These schools and colleges are securing top positions in public examinations, cultural, intellectual and other extra-curricular competitions. The discipline and moral state of the student also deserve commendation. But these qualities in education would not be possible without implementing these directives. The reflection of the performance of CPSC and EMSC in public examination and other fields will further authenticate the state of quality education:

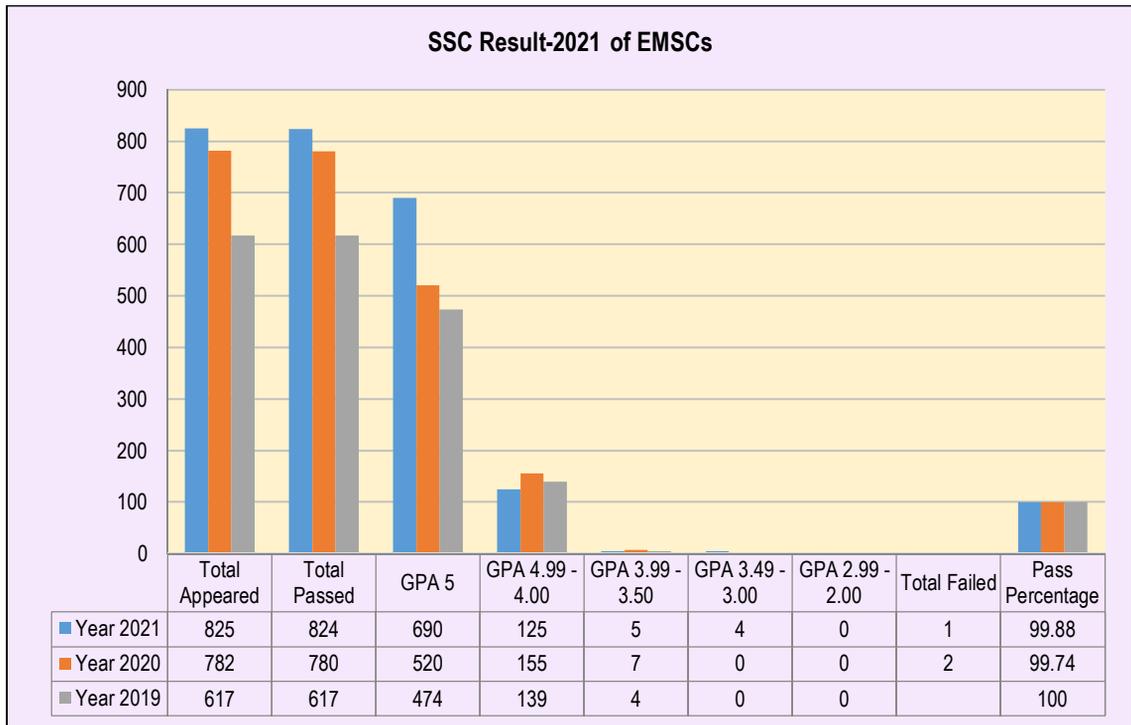
Public Examination. With minor exceptions, most of the CPSC and EMSC displayed outstanding performance in public examinations at secondary and higher secondary levels in last few years. Table 2, 3, 4 and 5 depict the academic performance of army run CPSCs and EMSCs in SSC and HSC Examinations:

Table-2: SSC Result of CPSCs from 2019 to 2021

Serial	Items	Year 2021	Year 2020	Year 2019
1	Total Appeared	6381	5646	5213
2	Total Passed	6369	5629	5201
3	GPA 5	4884 (76.54%)	3628 (64.26%)	3482 (66.79%)
4	GPA 4.99 - 4.00	1343	1492	1541
5	GPA 3.99 - 3.50	103	146	101
6	GPA 3.49 - 3.00	33	2	19
7	GPA 2.99 - 2.00	5	-	2
8	Total Failed	12	17	12
9	Pass Percentage	99.81%	99.70%	99.77%

Source: Author's Own Construct (Data Collected from Various Institutions)

Table-3: SSC Result of EMSCs from 2019 to 2021



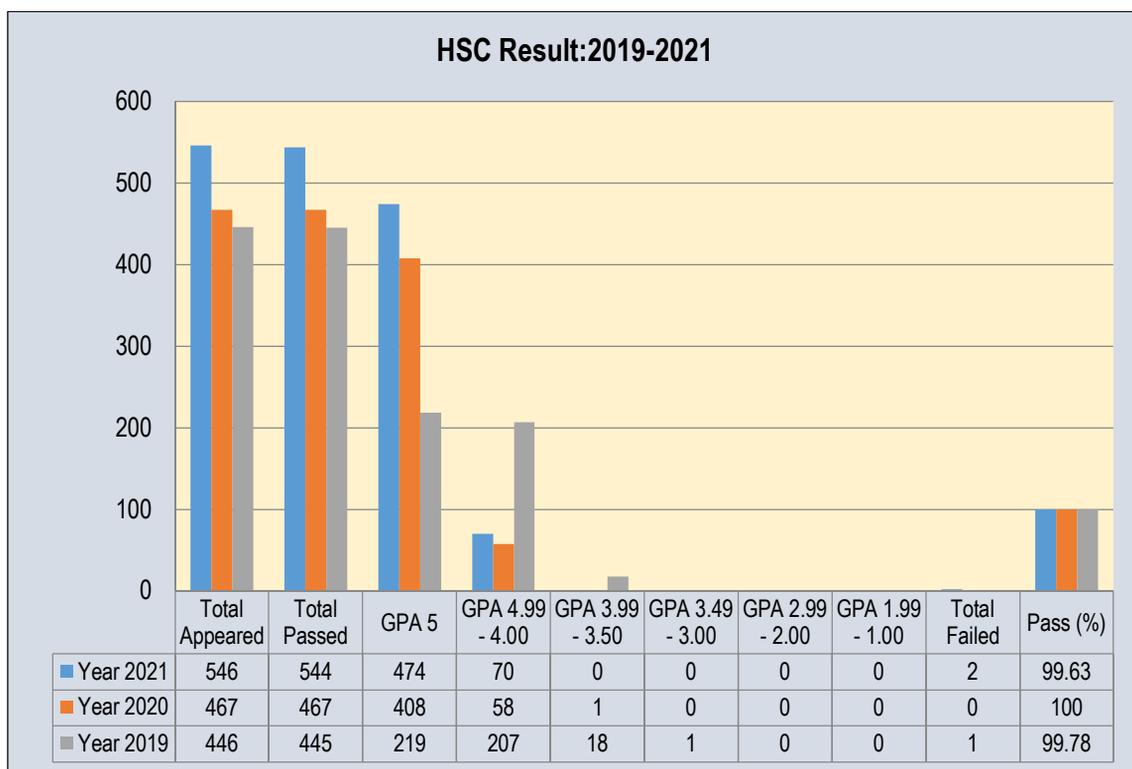
Source: Author's Own Construct (Data Collected from Various Institutions)

Table-4: HSC Result of CPSCs from 2019 to 2021

Serial	Items	Year 2021	Year 2020	Year 2019
1	Total Appeared	16254	15478	15052
2	Total Passed	16182	15478	14943
3	GPA 5	11469 (70.56%)	10195 (65.87%)	4725 (31.39%)
4	GPA 4.99 - 4.00	4353	4433	8138
5	GPA 3.99 - 3.50	296	534	1530
6	GPA 3.49 - 3.00	53	125	413
7	GPA 2.99 - 2.00	11	27	34
8	GPA 1.99 - 1.00	-	-	3
9	Total Failed	72	00	109
10	Pass Percentage	99.56%	100%	99.28%

Source: Author's Own Construct (Data Collected from Various Institutions)

Table-5: HSC Result of EMSCs from 2019 to 2021



Source: Author's Own Construct (Data Collected from Various Institutions)

Table 2, 3, 4 and 5 exhibit the outstanding performance by both the CPSCs and EMSCs in public examinations. This result is achieved due to the relentless effort of the teachers, parents and the institution authority which is surely a reflection of one of the criteria of quality education.

Higher Education. Every year a good number of students are taking admission to renowned institutions both at home and abroad. The prominent home bound higher educational institutes include Bangladesh University of Engineering Technology (BUET), Dhaka University, Govt. medical colleges and other public universities and engineering institutes. Students with the strong financial background are going to world famous universities abroad for graduation and post-graduation. However, this field needs improvement because the statistics of the number of students passing out and the number of students taking admission in renowned institutions each year are not very healthy.

Performance as Feeder Institutions of Armed Forces. Alongside the Cadet Colleges, the CPSCs and EMSCs are contributing greatly in motivating their potential students to join the Armed Forces to be commissioned officers. The interested students are given institution sponsored preparatory training so that they can qualify in the selection test of Inter Services Selection Board (ISSB).

PART III

The Challenges to Ensuring Quality Education

Status Quo: Too Many Students, Too Few Teachers

Educational theory suggests that smaller classes lead to more teacher-student interaction. UNESCO, scholars, and policymakers in many developing nations recognize a teacher-student ratio of 1:40 as a maximum target. Army run schools and colleges have integrated even better policies for teacher-student ratio to harness the effectiveness of micro classroom teaching. However, it cannot be implemented in full in most of the schools and colleges because of extraordinary demand and pressure for admission. As such, maintaining the teacher-student ratio, especially at junior level has become a challenge.

Status Quo: Private Tuition Vs Classroom Teaching

Lack of quality classroom teaching and overcrowded classrooms have greatly contributed to the tendency of employing private tutors. Despite the restriction imposed by army authority, private supplementary tutoring is increasing alarmingly. Some teachers have indulged them in such private tuition commercially which ultimately leads to less contribution during class hours. In addition lack of parental education especially in EMSCs compels the students to have hired teachers. Thus, private tutors for primary and secondary level students have become a well-accepted norm that impedes quality education.

Status Quo: Too Many Candidates, Too Few Vacancies

The authority has to absorb tremendous pressure for the admission of students throughout the year. It is no surprise that a ward of either civilian or military parents once admitted to any army administered school or college does not leave before completion of secondary or higher secondary education, except in the case of officers who take away their family with them to the new place of posting. Hence, the vacancy always remains scanty or most cases no vacancy or even more students than capacity in the schools and colleges especially, in the city based cantonments. Many Junior Commissioned Officers and soldiers cannot get their children admitted to army run schools and colleges due to vacancy crisis which affects their morale. Thus, maintenance of troop's morale has become a challenge that originates from the sense of deprivation as they miss the opportunity to admit their children in army run schools and colleges despite being the members of the army. Thus a good number of military members are deprived of quality education for their children.

Status Quo: Quality Teachers Vs Pay and Allowances

Quality in education is ensured through quality teaching which depends on the quality of teachers. Army run schools and colleges are spread across the country in different cantonments. Good quality teachers can be easily recruited in city based cantonments like Dhaka, Chottogram, Rangpur, Rajshahi etc. However, the schools and colleges at remote cantonments suffer greatly to

select quality teacher with existing pay and allowances. The case of EMSCs is more severe as teachers with fluency in English are scanty. Thus, recruitment of quality teacher with existing pay structure has become a challenge that affect the quality teaching.

Difficulties in Transfer of Teachers

There is no policy available for the transfer of teachers among the CPSCs and EMSCs. Unlike government schools and colleges in the country and the Cantonment Board Schools and Colleges, Bangladesh Army run CPSCs and EMSCs cannot enjoy the teachers' transfer facilities. There are overwhelming difficulties in this regard. Pay, allowances and other fringe benefits are higher in city based cantonments and therefore, good quality teachers always seek their fortune in better paid institutions. In addition, female teachers do not welcome transfer due to the difficulties of separation from the family. But these difficulties lead to the challenges in standardization among the institutions.

Measures to Overcome the Challenges

Improving Teacher-Student Ratio

As desired by the senior leadership, there should be no compromise with standard quality education in army run CPSCs and EMSCs. The ideal teacher student ratio is a prerequisite for quality education. But this cannot be achieved suddenly since most of the sections are already overcrowded. Both short and long term measures to be taken to improve this situation gradually. As a short term measure, number of student should not exceed more than 35 for pre-primary and primary section. For junior section where the number of student have already crossed 35 or above, no new admission should be entertained. It may help decrease the number of students in the long term.

Adoption of Army School Mistresses Corps

Following the tradition of British and British Indian army, adaption of Army Schoolmistresses Corps may be introduced. British army and British Indian army have taken benefit of their service more than about 200 years. The induction of army school mistresses will help posting quality teachers in the schools and colleges of the remote cantonments and thereby can ensure standardization. Nowadays most of the lady wives have good educational background and they are eager to contribute to their family financially. Many of them are working in different sectors. Recruiting them in Army School Mistresses Crops will bring a harmony in the familial life of officers. Wives and daughters of junior commissioned officers and other ranks may also avail this opportunity; however it requires a detailed study to assess the feasibility for such provision.

Provision for Teachers' Transfer

A standard policy for transfer of teacher will help in ensuring quality education by sharing knowledge and expertise of experienced teachers. This transfer policy must negotiate the existing difficulties by ensuring standard social life, accommodation, transport and other service benefits.

If the balance of quality teacher is ensured, school and colleges of remote cantonments will have a better teaching learning environment and thereby pressure for admission in city based school and colleges can be decreased. Students can also come into the contact of some better trained and good quality teachers.

Strengthening Central Coordination Cell in Army Headquarters

Presently, army run school and colleges are governed by the local governing authority nominated by the concerned area headquarters. However this school, colleges are centrally administered by a central coordination committee presided by Chief of General Staff of Bangladesh Army. This central coordination cell may be further strengthened to carry out research and formulate state of the art policies as to how quality education imbued with social and moral values can be ensured. Some of the very senior experienced teacher may be posted in the cell as inspector, sub-inspector to carry out physical inspection in different school and colleges if deemed necessary. This central coordination cell should serve as a central unifying body that will ensure uniformity and standardization among the institutions spread across the country. The cell will develop a child friendly futuristic learning and quality education at affordable cost.

Improving the Standard of Cantonment Board Schools and Colleges

At present, there are 38 cantonment board schools and colleges in Bangladesh Army. Some of them were even established during Pakistan era. Unfortunately, these institutions could not raise their standard to the expected level. There are lots of scopes for improvement in administration and academic activities. Senior leaderships have already vested the responsibility to respective Formation Headquarters to help improve the overall standard of Cantonment Board Schools and Colleges under the sponsorship of nominated CPSC/EMSC. If the standard of cantonment board school and colleges are brought at par CPSC and EMSC, the overall contribution of the army in quality education will be further enhanced. The pressure for admission in CPSC and EMSC will also be decreased. For better functioning, this Cantonment Board School and Colleges may be put under central coordination cell at Army Headquarters keeping a representative as competent authority from the Cantonment Board.

Recommendations

The merit of this study warrants few recommendations:

- a. Quality in education cannot be ensured without the quality teachers. Good quality teacher should be recruited with the condition that their service is transferable and they may have to go to the remote cantonments on posting as and when required.
- b. Immediate attention should be given to improving the infrastructural facilities of Cantonment Board Schools and Colleges.
- c. A well-defined module on ethical and moral education may be introduced in CPSCs and EMSCs.

- d. Further support from the army may be rendered to the CPSCs and EMSCs so that they can better prepare their students to join defence forces.

Conclusion

The Father of the Nation Bangabandhu Sheikh Mujibur Rahman took bold steps to free the people of the then newly independent Bangladesh from illiteracy. Bangabandhu started a universal education system after independence. Honourable Prime Minister Sheikh Hasina is working relentlessly to ensure quality education for the future generation. Her motto is to "leaving no one behind" and she has vowed to offer education for all⁹.

Similarly, the senior leadership of Bangladesh Army is carrying on with the modest endeavour to contribute in the education sector as its one of the peace time roles to fulfil the vision of the Father of the Nation adhering to the motto of the Honourable Prime Minister Sheikh Hasina for quality education. The overall contribution of Bangladesh Army in education sector under the umbrella of Ministry of Education, especially in pedagogy has drawn greater attention from the people of all walks of life. The education service rendered by CPSCs and EMSCs has turned them as a role model and these schools and colleges are listed at the top among the 'High Performing Educational Institutions'. The brilliant performance in Public Examinations, outstanding results in competitive tests and good positions in admission tests for higher studies have brightened the image of CPSCs and EMSCs across the country.

However, there is no end of improvement in any enterprise and there is no such word as 'perfect'. This study has already revealed some challenges which need to overcome through effective steps. Schooling opportunity for students coming from military families needs to be ensured to maintain troops' morale so that they can better engage themselves in the service with the complacency that the organization they serve in looks after their welfare. Transfer policy for teachers, maintaining teacher student ratio and creating better teaching-learning environment also need attention.

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EXPLOSIVE INCIDENT COUNTERMEASURES: IMPORTANCE OF UNDERSTANDING THE IED LEXICON AND AN APPROACH TO DEVELOP THE TRAINING AND POLICY FOR BANGLADESH ARMY

Colonel Mohammad Ziaul Hoque, psc

"We strongly condemn terrorism in all its forms and manifestations, committed by whomever, wherever and for whatever purposes, as it constitutes one of the most serious threats to international peace and security."

- The President of Sri Lanka at UN General Assembly, 2009

Abstract

Explosive violence is an ongoing challenge worldwide. The source of explosive violence is explosive weapons which can be conventional munitions to explosive devices. The explosive remnants of war and readily available materials are used to construct devastating explosive weapons by non-state armed groups and cause severe injuries and deaths to the surrounding people and security forces. Bangladesh is susceptible to explosive violence due to its geographical location. The country has also experienced grenades and improvised explosive device attacks in the last two decades. United Nations peacekeepers of the Bangladesh Army also suffered casualties in various African countries' missions. A legal and comprehensive defeat framework is essential to countermeasure the explosive incidents, which will help formulate national standards, policies, and doctrine for Bangladesh Army. At the tactical level, capacity building of security forces, civilians, institutions, organisations, and disposal units needs to be enhanced with proper training, risk education and modern equipment. The qualifications and training of the disposal team should not be compromised; failure to train personnel properly may cause deaths and injuries. Hence, the task of explosive incident countermeasures is considered commendable humanitarian support to the nation and the world.

Keywords: Explosive violence, explosive weapons, capacity building, defeat framework.

Introduction

Lieutenant General Michael Barbero, one of the brilliant strategic planners of counter improvised explosive device (CIED), said, "In the 20th century, artillery was the greatest producer of troop casualties. Improvised Explosive Device (IED) is the artillery of the 21st century."¹ He also expressed that all stakeholders must be simultaneously prepared for tomorrow's CIED and counter threat network to mitigate the IED threats of today. To do so, he emphasised on institutionalising the knowledge, capabilities, and experiences achieved during different operations of war and campaigns. The unconventional use of explosives by non-state armed groups is an on-going global

¹ Lieutenant General Michael Barbero, Director, Joint IED Defeat Organization (JIEDDO), US Army, 2011-2013.

challenge. The use of explosives in an unconventional way started in the 12th century in China. Irish Republican Army (IRA), a terrorist activity group, used explosives in an infamy way in the 1970s.

The world witnessed the massive use of IEDs during the Iraq and Afghanistan wars in early 2000.² In the present-day context, IEDs are the weapon of choice by non-state armed groups. It is observed that casualties by IED attacks are overwhelmingly civilians.³ IED can be a letter bomb with a simple mechanism to a complex Vehicle Borne IED (VBIED) and Person Borne IED (PBIED) with radio control, remote control, and anti-handling devices. IED makers continuously adopt new technologies and use readily available materials.⁴ The motive of non-state armed groups behind placing IEDs is to maim, kill, and paralyse a nation. Hence, the disposal of an IED is a complex tactical operation and poses an enormous threat to the disposal team and the surrounding people.

This paper will discuss the subject matter with an understanding and review of literature, i.e., UN Mine Action Service (UNMAS) IED lexicon and likely threat scenario with conceptualised IED defeat framework suitable for the Bangladesh Army. This paper will also describe the essential guidelines for formulating the Standing Operating Procedure (SOP) and capacity building for explosive countermeasures emphasising the qualifications, training of disposal teams and available facilities of different institutions. Ultimately, the Concept of Operations (COO) is suggested with guidelines for formulating policies and training development for Bangladesh Army.

Understanding and Reviewing the IED Lexicon

Definition of IED

An IED is ‘a device placed or fabricated in an improvised manner incorporating destructive, lethal, noxious, pyrotechnic, or incendiary chemicals designed to destroy, incapacitate, harass, or distract. It may incorporate military stores but normally devised from non-military components.’⁵ Explosive weapons fundamentally can be categorised into two main groups. Firstly, the authorised factory produced conventional explosive weapons with the government's sanction. The primary purpose of using conventional explosive weapons is to protect the state's sovereignty and those are generally used by military forces. Secondly, unconventional explosives or homemade explosives are used by non-state armed groups to implement their ideology and political philosophies. Sometimes IED or booby traps⁶ are constructed with explosive remnants of war (ERW), which are conventional munitions. Explosive weapons do not know friends or foes and neither military nor civilians.

² Hotchkiss, P., (2018), “Explosive threats - the challenges they present and approaches to countering them.”

³ Action on Armed Violence (AOAV), *Improvised Explosive Device Monitor*, 2017.

⁴ Readily available materials can be commercial explosives, astray ammunitions, explosive remnants of war (ERW), homemade explosive (HME), various electrical switches, sensors, remote control devices etcetera.

⁵ IMAS 09.31 (February 2019), “*Improvised Explosive Device Disposal*”, First Edition, p 5.

⁶ <https://dictionary.cambridge.org/dictionary/english/booby-trap> “something dangerous, especially a bomb, that is hidden inside somewhere that looks safe”, (Accessed on 18 August 2022).

Reviewing the IED Lexicon

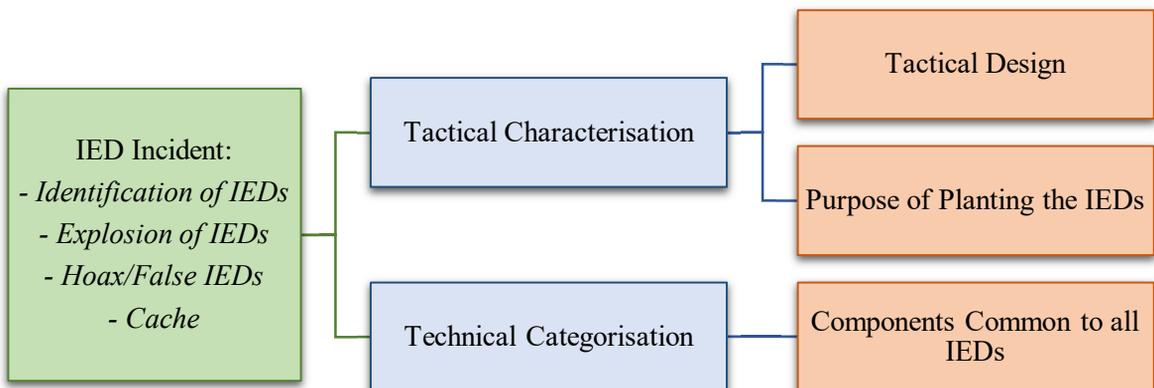
Understanding the IED lexicon is crucial for the armed and security forces in formulating plans and policies. The lexicon will also help to prepare the conceptual IED defeat framework. Both experts and non-experts will have a better understanding of the terminologies and will be able to communicate with each other effectively. The lexicon encompasses theoretical knowledge and a complete understanding of IED incidents, the types and the critical/sensitive components of IEDs. Most importantly, understanding the lexicon will improve the collection, analysis, accumulation, and dissemination of IED information at the strategic, operational, and tactical levels. Therefore, formulation of policy and training will be easier and more effective for the people working in explosive violence environments. Understanding the lexicon has the following benefits:⁷

- a. Standardisation of IED-related terminologies.
- b. Easier management of the database.
- c. Formulation of IED-related education and training.
- d. Development of standards, policy, and doctrine.

In Figure 1, a schematic diagram of an IED incident is described in a hierarchy form. IED incidents can be identifying an IED, recovering unexploded and exploded IEDs, hoax/false IEDs, or discovering a cache. Two broad heads help understand an IED incident:⁸

- a. Tactical characterisation.
- b. Technical categorisation.

Figure 1: A Schematic Diagram of an IED Incident



Source: UNMAS IED Lexicon

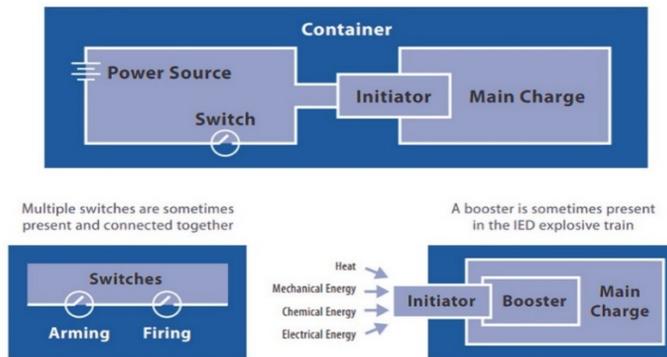
⁷ UNMAS IED Lexicon, p-iv.

⁸ Ibid, p-5.

Principal Components and Types of IED

The typical components of most modern IEDs are shown in Figure 2. The components are the container, power source, switches, initiator/booster, and main charges.

Figure 2: Common Five Components of IED



Source: UNMAS IED Lexicon and Training Précis of ECSME⁹

In addition, IEDs are classified as either timed, command, or victim operated. Different types of IEDs are described in Table 1.

Table 1: Types of IED¹⁰

Nomenclature	Description
Command Wire IED (CWIED)	An IED with a different firing and contact point and the primary device is connected through a wire from a distance.
Person Borne IED (PBIED)	The most dangerous IED. PBIED is a suicide bomber who willingly or unwillingly carries an IED mechanism. The suicide bomber himself activates the IED or is triggered by remote command initiation.
Explosively Formed Projectile (EFP)	A specially designed IED capable of penetrating armour vehicles. The explosives are placed behind the metal-shaped plate and demonstrate a shaped charge effect of conventional weapons when detonated.
Radio Controlled IED (RCIED)	An IED is prefabricated with a transmitter/receiver. The transmitter/ receiver acts as a switch, and the IED is initiated by wireless.
Vehicle Borne IED (VBIED)	An IED is delivered by a ground-based vehicle (car, jeep, or van). The vehicle serves as the means of concealment for the IED.
Suicide VBIED (SVBIED)	A SVBIED requires a driver or passenger inside the vehicle to detonate the explosives. Sometimes, it may incorporate a command initiation system with the idea that the security forces kill the driver or passenger even though the IED does not fail.
Victim Operated IED (VOIED)	The victim activates an IED.

Source: Author's Own Construct

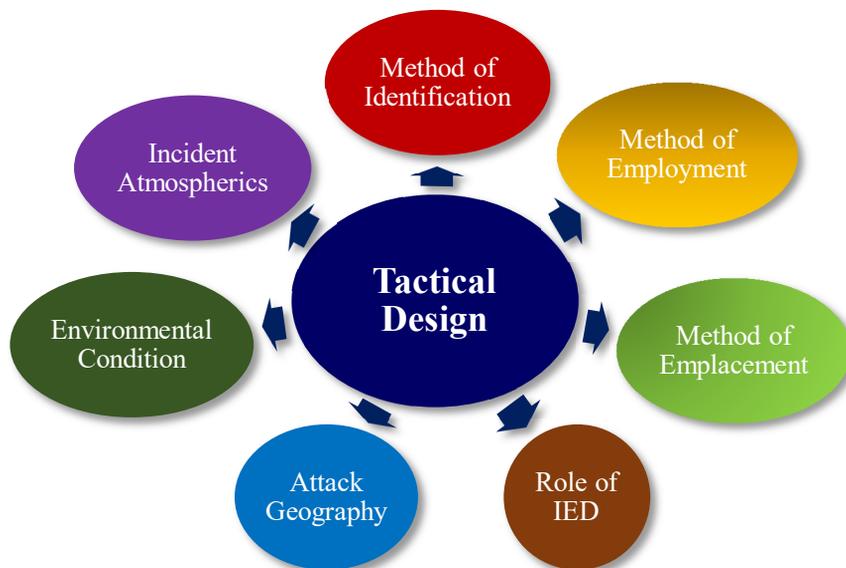
⁹ Engineer Centre and School of Military Engineering (ECSME), Bangladesh Army

¹⁰ Hoque, M. Z., "Counter Improvised Explosive Device: Understanding and Development of Training, Policy and Doctrine for Bangladesh Army", ARTDOC Journal, Volume 1, Issue 1, December 2021, p-63.

Tactical Characterisation of an IED Incident

The tactical characterisation describes how an IED incident is planned and conducted by non-state armed groups. The acquired knowledge on planting the IED is used to develop the Tactics, Techniques, and Procedures (TTP) for security forces working in the IED environments. The lessons learned from an IED incident are exploited to upgrade and develop IED-related education, training, and equipment. The tactical design (Figure 3) typically covers the role of IED, method of identification, method of employment, method of emplacement, attack geography, and environmental and atmospheric conditions of the area.

Figure 3: Tactical Design of IED



Source: UNMAS IED Lexicon and Training Précis of ECSME

The method of identification is carried out primarily by visual observation and by search detectors. In addition, search animals, i.e., dogs and rats are used to identify and detect IEDs. The method of employment can be vehicle-borne (VBIED), person-borne (Suicidal/PBIED), projected (rocket), etcetera. Non-state armed groups emplace IEDs on the surface, subsurface, or elevator based on the TTP of security forces. Hence, the TTP of own forces must be flexible enough to conduct explosive incident countermeasures (EIC) effectively. The environmental condition depends on the visibility, time of the day, and weather. The demeanour of the civilian population provides incident atmospherics at upcoming IED events. The absence of normality and the presence of abnormality are the key indicators of likely IED events. The knowledge of 'Attack Geography' is essential to tactical design. Attack geography covers device placement characteristics and site-specific characteristics. The details of the attack geography are described in Table 2.¹¹ The role of IED describes the use of IEDs as a primary, secondary, or subsequent form of attack by non-state armed groups.

¹¹ Lexicon, Op Cit, p-9.

Table 2: Attack Geography of IED Incident

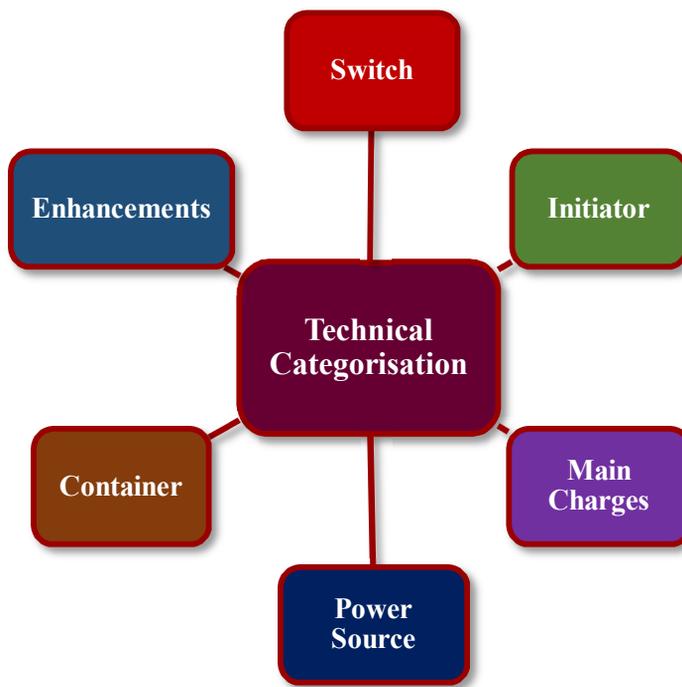
Device Placement Characteristics	Site-Specific Characteristics
<ul style="list-style-type: none"> • Distance to Target • Blast Dimensions • Estimated Net Explosive Weight • Blast Crater Material • Line of Sight • Contact Point • Firing Point • Concealment • Aiming Marker 	<ul style="list-style-type: none"> • Angle of Attack • Obstacles • Routes
	Blast Dimensions
	<ul style="list-style-type: none"> • Crater Diameter • Crater Depth • Debris Field Radius

Source: Author's Own Construct

Technical Categorisation of an IED

The principal components and types of most modern IEDs are already described in Figure 2 and Table 1. All mentioned IEDs are categorised based on their construction, the types of containers, and the switches used. From the categorisation, technical and forensic information is obtained and exploited. Figure 4 describes the technical aspects of an IED.

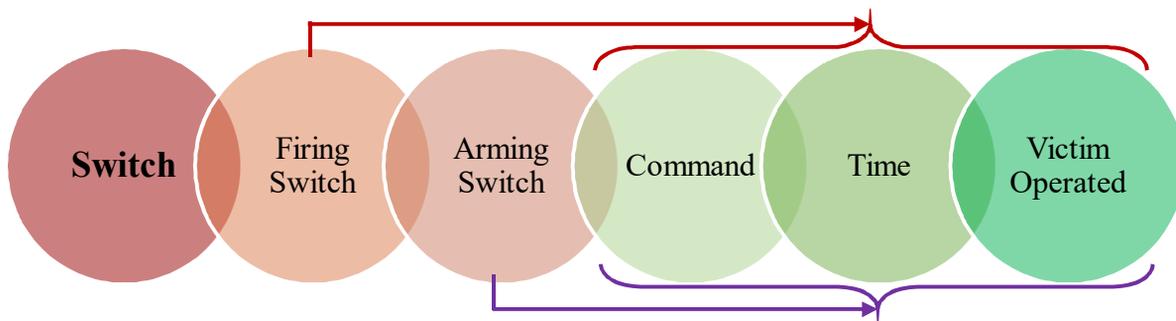
Figure 4: Technical Characteristics of IED



Source: UNMAS IED Lexicon and Training Précis of ECSME

Switches are the most critical part of the IED. This device makes, breaks, or changes the connection of the IED's electrical circuits.¹² Switches are used for the safety of the IED makers as well as for activating the IED by victims. Due to the use of most modern switches, IEDs have become very hazardous to handle. Figure 5 shows that a single switch can have multiple functions, i.e., arming and firing. Again, several switches can be used for arming and firing the device. The switches are categorised by command, time, and victim operated.

Figure 5: Category of Switches used for IEDs

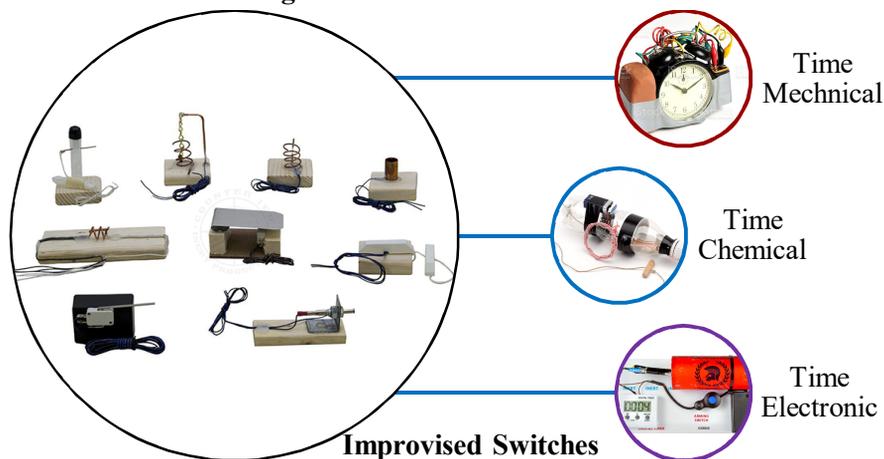


Source: UNMAS IED Lexicon and Training Precies of ECSME

Details of categories of switches are as follows:

Time. Time switches are used with an IED to function the device at a predetermined moment. Time switches can be short delays or long delays.¹³ Figure 6 shows three types of improvised time switches.

Figure 6: Various Time Switches



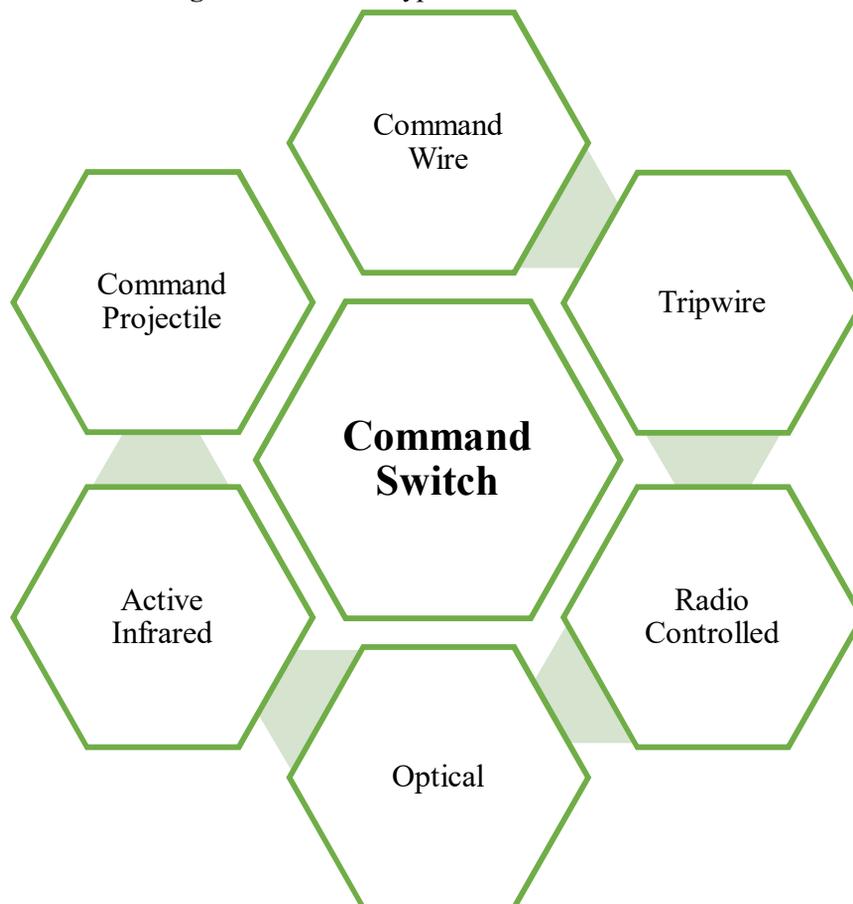
Source: Author's Collection from Internet

¹² IMAS 04.10, Second Edition (Amendment 10, February 2019), "Glossary of mine action terms, definitions and abbreviations", New York, USA, p-39.

¹³ Geneva International Centre for Humanitarian Demining 2020, "Improvised Explosive Device Clearance Good Practice Guide", GICHD, Geneva, p 18.

Command. This type of IED remains under the control of non-state armed groups. The device is activated at an opportune moment, observing the movements of security forces. Command IED may have a physical link (e.g., command wire, command pull) or a nonphysical link (e.g., a radio-controlled device).¹⁴ Figure 7 shows various types of command switches.

Figure 7: Various Types of Command Switches



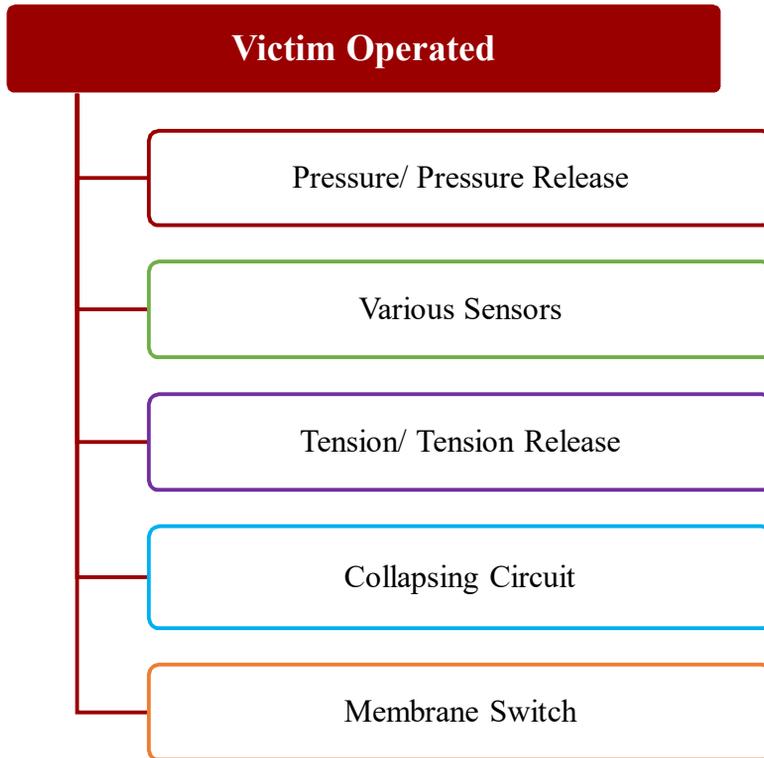
Source: UNMAS IED Lexicon and Training Précis of ECSME

Victim Operated. An IED functions through an action made by the victim, usually either through contact (e.g., a pressure plate or tripwire) or influence (e.g., a passive infrared (PIR) sensor). Victim-operated IEDs (VOIED) can cause significant unintended casualties as they can remain viable for a long time.¹⁵ Figure 8 depicts various types of victim operated switches.

Figure 8: Various Types of Victims Operated Switches

¹⁴ Ibid, p 18.

¹⁵ GICHD (2020), Op Cit, p 18.



Source: UNMAS IED Lexicon

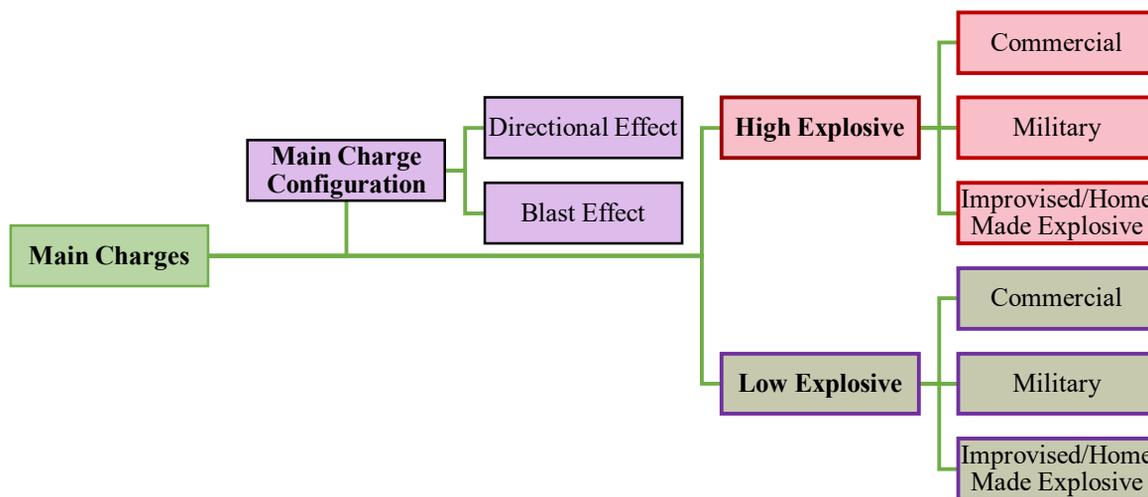
The main charges are explosive compounds which are homogeneous substances. The explosives molecules contain the oxygen, carbon, and hydrogen necessary for combustion.¹⁶ Explosive burns or decomposes quickly and produces large amounts of heat, gases, and shock waves. Chemical explosives are divided into two categories: low explosives and high explosives. Low explosives consist of fuel and oxidiser, which burn very rapidly, known as 'deflagrate'. Low explosives need confinement to explode. Hence, the destruction capacity in open space is lesser than that of high explosives. The black powder is one example of low explosives.

High explosives are chemical compounds that react much faster and 'detonate'. Detonation creates supersonic shock waves that pass through the materials instantaneously. High explosives do not need any confinement to explode. Therefore, they can produce extreme heat, gases and shock waves in open space than burning. Nitro-glycerine, trinitrotoluene (TNT), and RDX are examples of high explosives. In comparison, non-state armed groups use IEDs as their choice of weapon. Hence, they use high explosives as the main charges readily available to their locality. In addition, they set up the main charges for directional and blast effects as have been projected in Figure 9.¹⁷

¹⁶ Ibid, Lexicon, p 36-39 and EOD, CIED Precies of ECSME.

¹⁷ Lexicon, Loc Cit, p 36-39.

Figure 9: Types and Effect of Main Charges



Source: UNMAS IED Lexicon and Training Précis of ECSME

Threat Scenario and Defeat Framework for Bangladesh Army

Threat Scenario around the World and Bangladesh

António Guterres, the UN Secretary-General, said, "Many victims of explosive weapons face lifelong disabilities and serious psychological trauma. In addition, using those weapons in urban areas devastates essential infrastructure and services like water, electricity, and sanitation. Healthcare services are severely disrupted when medical personnel are killed or injured, ambulances cannot reach the wounded; hospitals are damaged, and utility services are cut off because supply lines have been destroyed."¹⁸

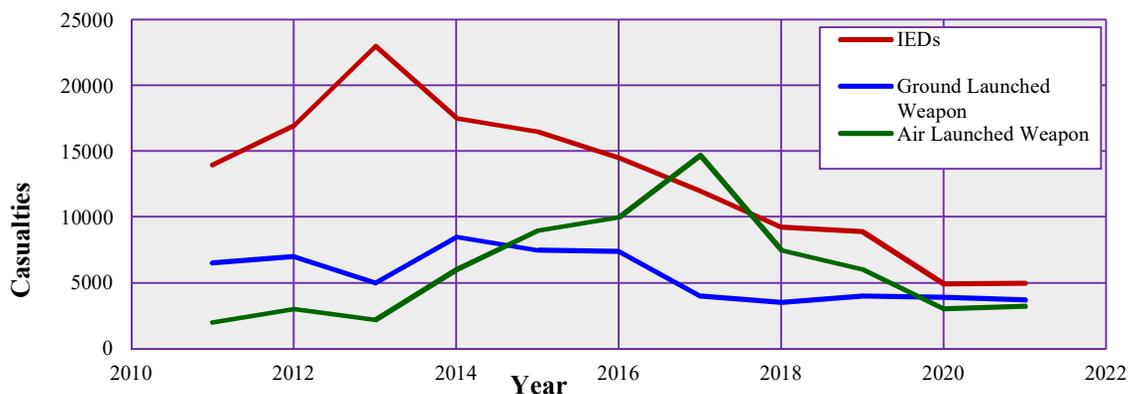
The source of explosive violence is explosive weapons which cause deaths, injuries, and damage by projecting explosive blasts, heat, and often fragmentation around a point of detonation. Explosive weapons include a variety of munitions, such as air-dropped bombs, mortars, artillery shells and IEDs.¹⁹ Explosive weapons caused a total of 19,473 casualties in 2021. Among the casualties, 9,147 people were killed out of which 3,376 were civilians and 10,326 were injured out of which 7,726 were civilians, making it 11,102 civilians (57%) and the rest were members of security forces and law enforcement agencies. Figure 10 shows the casualties caused by IEDs from 2011 to 2021 compared to other weapon systems globally.²⁰

¹⁸ UN Secretary General, 'Protection of civilians in armed conflict, Report of the Secretary-General', UN Security Council, S/2021/423, 03 May 2021. https://www.securitycouncilreport.org/atf/cf/%7B65BFCF9B-6D27-4E9C-8CD3-CF6E4FF96FF9%7D/s_2021_423.pdf (Accessed 11 Aug 2022).

¹⁹ Action on Armed Violence (AOAV), "Explosive Violence Monitor (EVM) 2021", p 3-4.

²⁰ Ibid, EVM (2021), p 3.

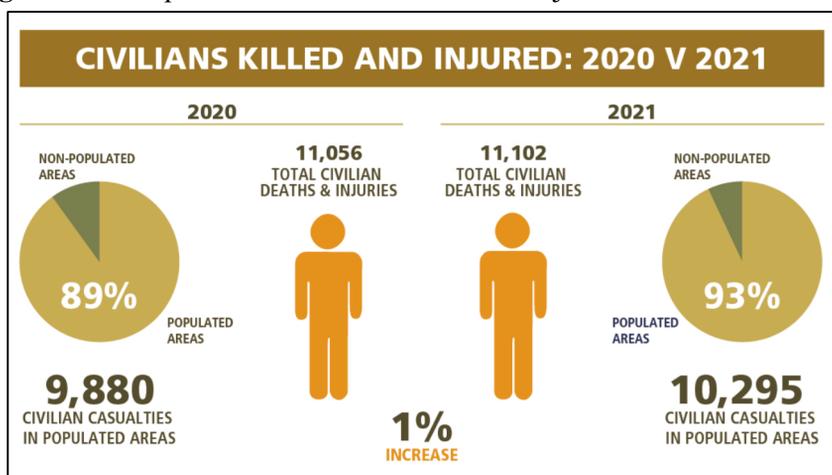
Figure 10: Casualties Caused by IEDs from 2011 to 2021 and other Weapon Systems



Source: Explosive Violence Monitor 2021

It is observed that the casualties caused by IEDs worldwide are higher than other types of explosive weapons. The comparison of civilians killed and injured in the year 2020 and 2021 are given in Figure 11.²¹

Figure 11: Comparison of Civilians Killed and Injured between 2020 to 2021



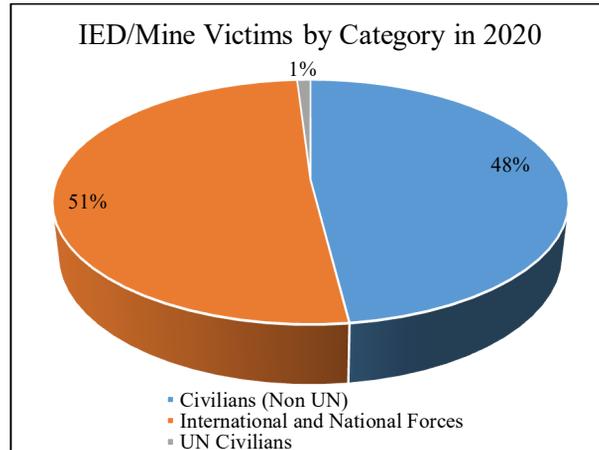
Source: Explosive Violence Monitor 2021

Bangladesh Army has been involved in United Nations Peace Keeping Operation (UNPKO) since 1988. UNPKO forces and civilians at MINUSMA²² are highly vulnerable to attacks from roadside IEDs and Suicidal Vehicle Borne IEDs (SVBIEDs). Bangladesh contingent members at MINUSMA were killed in action (KIA) and injured by the VBIEDs attack and roadside IEDs. Figure 12(a) describes IED attacks and mine explosions at MINUSMA in 2020, where 76 were killed and 287 were injured.

²¹ Ibid, EVM (2021), p 9.

²² United Nations Multidimensional Integrated Stabilization Mission in Mali (MINUSMA).

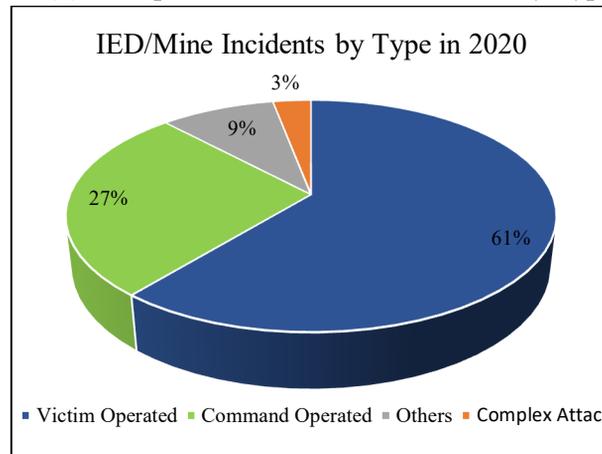
Figure 12 (a): Comparison of IED/Mine Incidents by Category in 2020



Source: www.minusma.unmissions.org

It is observed that 51% of victims were UN and national security forces, and the rest 49% of casualties were native civilians, including UN civil personnel. Figure 12(b) illustrates the types of IEDs used by armed groups at MINUSMA.²³

Figure 12 (b): Comparison of IED/Mine Incidents by Type in 2020



Source: www.minusma.unmissions.org

Defeat Framework for Explosive Incidents Countermeasure

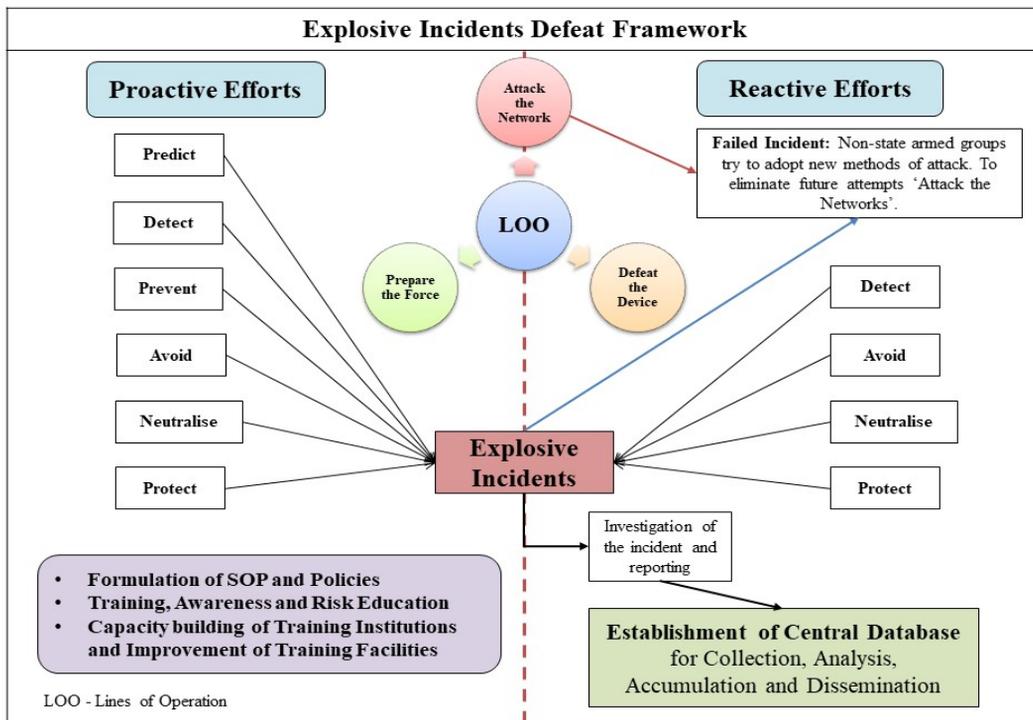
Bangladesh is susceptible to explosive violence due to its geographical location. Bangladesh experienced explosive violence in the last two decades, including grenades and IED attacks. Therefore, formulating a defeat framework for armed and security forces are essential based on the threat scenario. To counter the explosive incidents, all stakeholders must carry out

²³ Explosive threat over view of Mali in January 2021, https://minusma.unmissions.org/sites/default/files/202101_explosive_threat_overview_mali_en1.pdf (Accessed on 11 August 2022).

proactive and reactive activities based on the Lines of Operations (LOO). Therefore, a Defeat Framework model is proposed in Figure 13 to counter the explosive violence and incidents.²⁴ Proactive efforts are the actions that will be taken ahead of time, and reactive efforts are those taken in the face of explosive violence and incidents.

The framework considers six tenets of proactive effort, i.e., predict, detect, prevent, avoid, neutralise, and protect against explosive violence threats. Among these, four tenets are reactive in nature and suitable for the security forces working in explosive environments. First, the predicted activity identifies enemy personnel, equipment, infrastructure, and TTP. Second, the detect activity contributes to identifying and locating enemy personnel, explosive devices, and their components. Third, preventing activity unsettles and beats the chain of actions, including bomb makers, leaders, and financiers. Fourth, avoiding activity keeps friendly forces away from IED attacks when prevention is not possible. Fifth, neutralising activity contributes to destroying enemy personnel and neutralising explosive devices. Finally, protection activity ensures the training, awareness and risk education for security forces and civilians.²⁵

Figure 13: Proposed Defeat Framework for EIC



Source: Conceptualised by the Author

²⁴ Hoque, M. Z., “Counter Improvised Explosive Device: Understanding and Development of Training, Policy and Doctrine for Bangladesh Army”, ARTDOC Journal, Volume 1, Issue 1, December 2021, p-67.

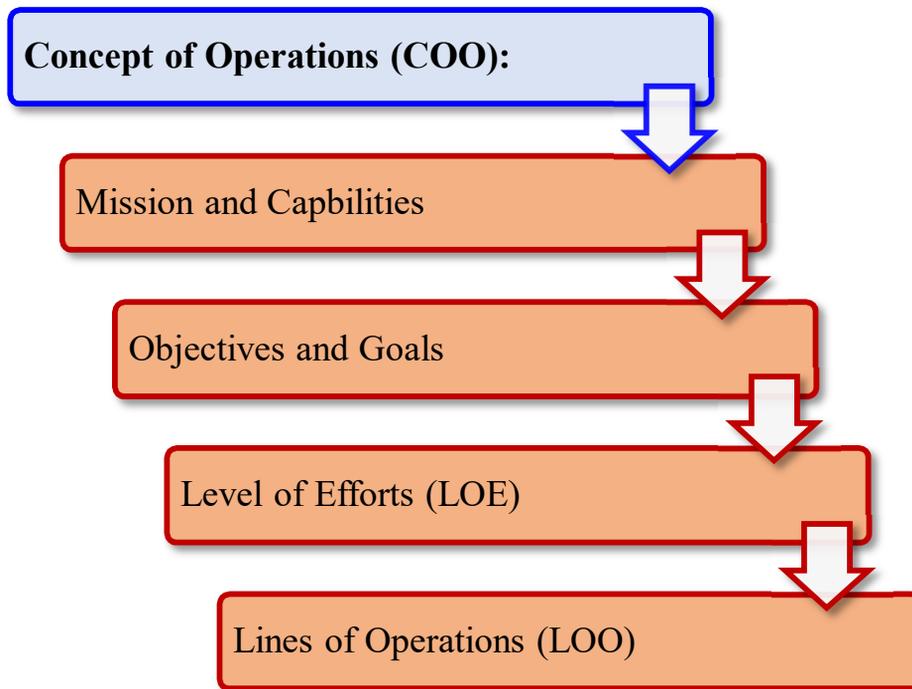
²⁵ Hoque, M. Z., “Preparedness against explosive terrorism and countering improvised explosive device”, Bangladesh Army Journal, 57th edition, 2015, p 74-76.

An Approach to Developing Training and Policy for Bangladesh Army

Concept of Operations

The Concept of Operations (COO) is the guideline to formulate a comprehensive mission, capabilities, functions, and responsibilities for all stakeholders in an explosive incident. In addition, the COO will help to formulate SOP, policies, and training curriculum development for the security forces and persons working in explosive violence environments. Based on the threat scenario globally, regionally, and nationally, the COO for Bangladesh Army can be limited within the Level of Efforts and Lines of Operations. Figure 14 demonstrates the proposed Concept of Operations.

Figure 14: Proposed Concept of Operations



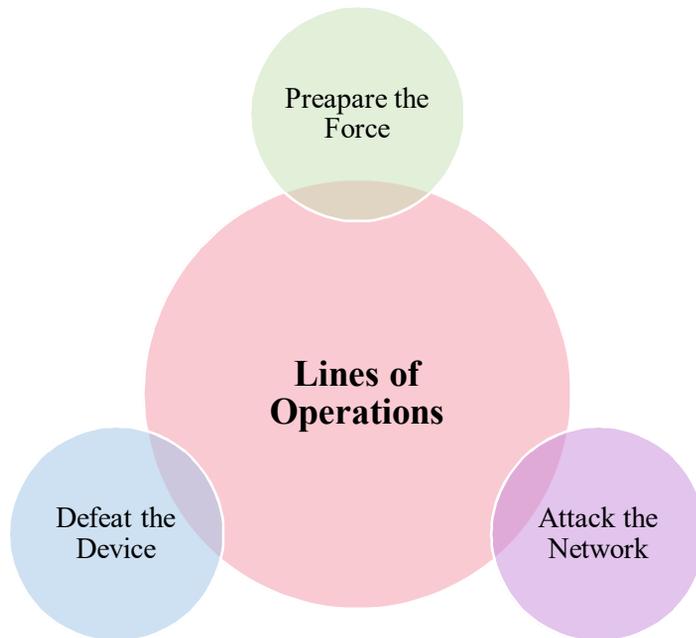
Source: Prepared by the Author

Level of Efforts (LOE). LOE develops a base for the COO and course of action (COA) at the strategic, operational, and tactical levels. The mission should be specified to counter the explosive incidents, and the objectives should be easily attainable. LOE designate the charter of duties of tactical headquarters, departments, organisations, and institutions in all matters related to explosive violence.

Lines of Operations (LOO).²⁶ The proposed LOOs are prioritised as Prepare-Attack-Defeat. Figure 15 exhibits the LOO.

²⁶ Counter-IED Strategic Plan JIEDDO 2012-2016 (2012), pp 8-9.

Figure 15: Lines of Operations



Source: Counter-IED Strategic Plan JIEDDO 2012-2016

- (1) **Prepare the Force.** The security forces, including civilians deployed in explosive incident environments, should have formal training and awareness so that the knowledge and proficiency can be utilised to improve the countermeasure capability of explosive incidents. In addition, it will help the security forces to combat any awkward situation.
- (2) **Attack the Network.** This LOO is proactive and offensive. To destroy and eliminate the capabilities of the non-state armed groups, attacking the network before they emplace the explosive weapons is essential. It will significantly reduce the risk of explosive threats and disrupt the transborder networks of non-state armed groups. In addition, it will ease up the process of defeating the device.
- (3) **Defeat the Device.** This LOO is a tactical level operation and enhances the freedom of manoeuvre. It will help detect the explosive weapons and neutralise them before the explosion. Only qualified EOD and IEDD operators can perform the Render Safe Procedure (RSP) to defeat the explosive devices.

Formulation of Standing Operating Procedures (SOP) and Policies

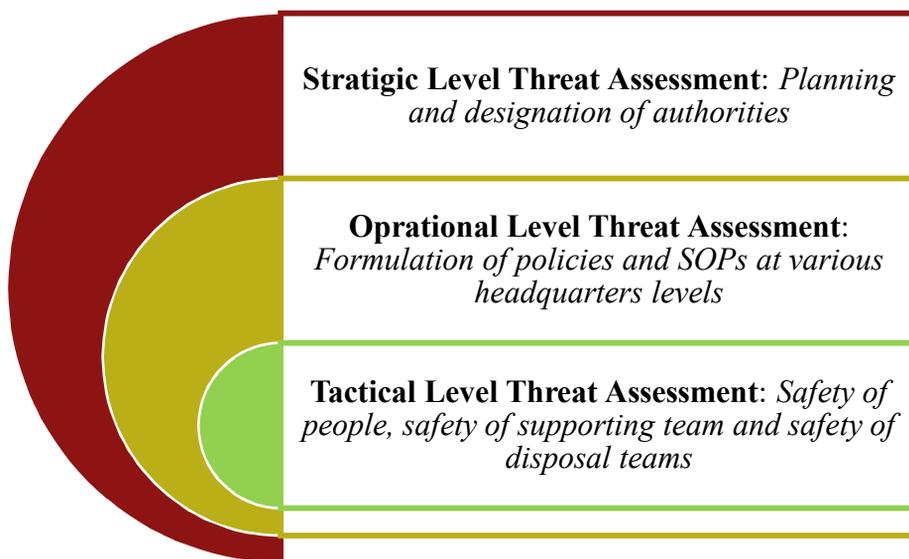
The formulation of SOP is essential to fill the gaps between tactical and technical aspects of explosive incidents. Therefore, security forces and other stakeholders will be able to respond to

the expanding and increasingly complex situation. Before the formulation of SOP, the guiding philosophy²⁷ must be selected comprehensively. The best guiding philosophy will be as follows:

- a. Preservation of life.
- b. Reduction of damages and preservation of property and infrastructure.
- c. Restoration of the situation to normality as soon as possible.
- d. Gathering technical information on explosive weapons. Preservation and collection of components for future reference.

On the other hand, before formulating policies and SOP,²⁸ the planning and threat assessment must be carried out at strategic, operational, and tactical levels. Figure 16 shows levels of threat assessment for explosive countermeasures.

Figure 16: Levels of Threat Assessment for Explosive Countermeasures



Source: Conceptualised by the Author and UN IEDD Standards 2018

Strategic threat assessment is the higher level planning and assessment of explosive incidents globally and regionally. At this level, the designation of authorities is deliberately described for the stakeholder to avoid confusion and dilemma. Operational level threat assessment should be carried out at headquarters levels, i.e., at Armed Forces Division (AFD) and Army Headquarters. Finally, tactical threat assessment refers to the authority for actions by qualified EOD, IEDD and CMD²⁹ disposal teams.

²⁷ Standing Operating Procedures (SOP)-2018 for bomb disposal, improvised explosive device disposal and engineer sweeping team of Bangladesh Army, UN IEDD Standards 2018, p 17, IMAS 09.31 (2019) 'IED Disposal', p 8.

²⁸ The author of this article was a prime member for formulating the Standing Operating Procedures (SOP)-2018 for bomb disposal, improvised explosive device disposal and engineer sweeping team of Bangladesh Army.

²⁹ CMD- Conventional Munition Disposal.

While formulating the policies and SOP, the following things should be given due consideration:

- a. The threat assessment.
- b. Acronyms and lexicon of terminologies.
- c. Area of responsibilities of different stakeholders and deployment orders.
- d. Channel of reporting.
- e. The phases and sequences of tactical level operations are to be included clearly for the disposal team.
- f. Organisations of various teams and their action plans, equipment, tools, and vehicles.
The charter of duties of every single person is to be mentioned and specified clearly.
- g. Dos and don'ts, safety precautions and special rules for operations.
- h. Need for establishing a command centre and incident control point (ICP).
- i. Need for medical coverage and training planning.
- j. List of equipment and final reporting.

Capacity Building for Explosive Countermeasures

Explosive Incident Countermeasures (EIC) broadly cover EOD, IEED, CIED, CMD and humanitarian demining (Figure 17).

Figure 17: Some Activities of EIC



Explosive Ordnance Disposal (EOD)



Improved Explosive Device Disposal (IEED)



Counter Improved Explosive Device (CIED)



Conventional Munitions Disposal (CMD)



Humanitarian Demining

Source: Prepared by the author (photos are collected from internet)

Capacity building is a significant part of the overall countermeasures approach and should be flexible with the changing situation. Capacity building includes quality training for subject matter experts, awareness and risk education for personnel deployed in explosive violence environments, development of training institutions, and modernisation of designated units. New technologies, modern equipment, and tools must be periodically incorporated into the disposal team to mitigate the changing situations of explosive violence. For capacity building, the training institutions should be accredited by proper authority and follow international standards of the UN, UNMAS and IMAS.³⁰

Qualifications and Training of the Disposal Team

The tactical level operations of Explosive Incident Countermeasures (EIC) are very complex and hazardous tasks requiring specific skills and qualifications. Therefore, for training, the target audiences need to be identified precisely. Broadly, there are three categories of target audiences:³¹

- a. Training for basic operators and experts.
- b. Search and awareness training for personnel deployed in explosive incident environments.
- c. Risk education for civil personnel.

Qualifications for Explosive Ordnance Disposal (EOD) Team: EOD operations vary from destroying grenades and sub-munitions to neutralising large bombs and missiles. EOD operations involve the detection, identification, field evaluation, render safe, recovery and disposal of explosive ordnance (EO).³² There are four EOD competencies levels, termed Level 1, 2, 3 and 3+. The EOD operators' skills are appended below:

- a. Level 1 (EOD) operator can find, expose, and destroy single mines and specific Explosive Remnants of War (ERW) on which he/she has been trained.
- b. Level 2 (EOD) operator must be Level 1 qualified. The operator can carry the munitions to a safe place for disposal. The operator is allowed to dispose of multiple items of ordnance simultaneously, only on which he/she is trained.
- c. Level 3 (EOD) operators can perform render safe procedure (RSP) and final disposal. They must be proficient in Levels 1 and 2.
- d. Level 3+ (EOD) operator is designated as an EOD specialist. The operator will attain control of the incident area. In addition to competency in Levels 1, 2 and 3, the operator will be able to perform clearance of Armoured Fighting Vehicle (AFV), depleted uranium related to EO, guided weapons and missiles, cluster munitions, underwater EOD, chemical EOD and IEDD.³³

³⁰ UNMAS- UN Mine Action Service and IMAS-International Mine Action Standards.

³¹ UN Standards, Op Cit, p 41.

³² IMAS 09.30 (2014), "Explosive Ordnance Disposal", Second Edition, p 2.

³³ Ibid, IMAS 09.30, pp 2-3.

Qualifications for Improvised Explosive Device Disposal (IEDD) Team: IEDD is a critical operation that demands special skills and qualifications. The phases of IEDD are identification, evaluation and planning, task execution, final disposal and reporting.³⁴ IEDs can vary from simple to extremely complex devices, i.e., an explosive device with PIR sensors, VBIED, and PBIED. Therefore, IEDD training must be conducted by qualified trainers from an accredited IEDD institution.³⁵ The IEDD operators' skills are appended below:

- a. Level 1 (IEDD) operator must know basic philosophy, SOP, IED components, method of emplacement, and related atmospheric conditions. Level 1 operator is directed by a qualified supervisor, and he/she is not qualified to plan and conduct RSP.
- b. Level 2 operator is qualified to supervise the preparation of IED equipment and can do minor demolition under supervision. However, he/she must be Level 1 qualified.
- c. Level 3 operator is qualified to plan, conduct RSP and final disposal. He/she must have advanced knowledge of IEDD matter and be capable of operating all IEDD tools and equipment.
- d. Level 3+ (IEDD) operator should be an expert performing humanitarian IEDD in a permissive environment. The operator has additional skills and can dispose of all types of IEDs in any environment. In addition, the operator can conduct post blast investigations (PBI).

CIED Search and Awareness Training and CMD Qualifications: CIED is not only the disposal of an IED when it is discovered. To eliminate the IED threats, the forces and civilians deployed in IED environments must follow three LOOs, i.e., prepare the force, attack the network, and defeat the device. Ms. Agnès Marcaillou, Director of UNMAS said, "The most important factor in mitigating the impact of IED attacks is training. Through training, UNMAS has reduced casualties among employed personnel by up to 80 percent."³⁶ Hence, the following CIED training can be conducted:

- a. CIED specialist training.
- b. CIED search and awareness training for all arms and services deployed in IED environments in UNPKO.
- c. CIED basic awareness and risk education for civilians and administrative personnel working in the IED environments.

Conventional Munitions Disposal (CMD) means the disposal of conventional ammunition. Generally, qualified Level 3+ EOD operators conduct CMD when ERW are found outside the contaminated area.

³⁴ SOP-2018, Op Cit, p 6 and IMAS 09.31 (2019), "Improvised Explosive Device", p 9.

³⁵ Engineer Centre and School of Military Engineering (ECSME) is the pioneer authorised institution to impart bomb disposal (BD), explosive ordnance disposal (EOD), IED disposal (IEDD) and CIED search and awareness training in Bangladesh Army. Ordnance Centre and School (OC&S) is also authorized to train on stray ordnance, unexploded ordnance (UXO) and IED to enhance the capacity of Bangladesh Army.

³⁶ A New Ambition to Defeat IEDs, <https://www.un.org/disarmament/update/new-ambition-to-defeat-ieds/> (Accessed on 15 August 2022).

Available Training Facilities in Bangladesh Army

In Bangladesh Army, two institutions and training centres impart explosive related training namely, the Engineer Centre and School of Military Engineering (ECSME) and the Ordnance Centre and School (OC&S). In addition, BIPSOT³⁷ provides some elementary CIED search and awareness training for all arms and services supported by the above mentioned institutions. Furthermore, ECSME has established a CIED village with a wide range of training facilities. ECSME provides EOD, IED, CIED, CIED search and awareness training.³⁸ Some of the facilities available at ECSME are³⁹:

- a. IED Indoor Simulator.
- b. CIED Model Room.
- c. Search Training Facilities.
- d. UN Training Ground: CIED search and awareness training for all arms and services deployed in the IED environments at UNPKO.
- e. Explosive Detection Dogs.
- f. Urban Breaching Area.
- g. Mine Simulator.
- h. CIED Village for situation training exercises (STX).

Figure 18: Training Facilities at ECSME



Source: Sappers' Journal, Issue 2, March 2022

³⁷ BIPSOT-Bangladesh Institute of Peace Support Operation Training.

³⁸ Hassan, Sk. N., "International EOD, IEDD, and CMD Qualifications and Capabilities of ECSME on this Training", Sappers' Journal, Issue 2, March 2022, p 57-59.

³⁹ Interview with Hossain, M. M., Senior Instructor, School of Military Engineering, ECSME, Date 11 August 2022.

Conclusion

Explosive violence is an on-going challenge as the source of explosive violence is pertinent to explosive weapons. Explosive weapons, i.e., ground-launched weapons, air-launched weapons and booby traps, are broadly used by military and security forces during conventional and unconventional warfare. Nevertheless, non-state armed groups prefer IEDs as their choice of explosive weapons in asymmetric warfare. IEDs are fabricated in an improvised manner to kill, destroy, and incapacitate civil personnel and security forces. It is observed that the casualties caused by IEDs worldwide are much higher than other types of explosive weapons. Therefore, understanding of IED lexicon is essential for armed and security forces to countermeasure any IED incident. Furthermore, two aspects of an IED incident, i.e., tactical characteristics and technical categorisation, will help the own forces to formulate a comprehensive defeat framework, doctrines, policies, and training curriculum.

Bangladesh experienced explosive violence in the last two decades, including IED attacks. Moreover, Bangladesh forces in various African countries conduct peacekeeping operations in explosive threat environments. Hence, countermeasures for the explosive violence in the homeland and at UNPKO are essential mission tasks for Bangladesh Army. Therefore, the proposed explosive incidents defeat framework should have both proactive and reactive efforts. The concept of operations (COO) is limited to Levels of Effort and Lines of Operations (LOO). Preparing the force, attacking the network and defeating the device is the most practised LOO followed by NATO forces and felt suitable for Bangladesh Army.

During the formulation of SOP, national standards, policies, and doctrine, the guiding philosophy must adhere to strategic, operational, and tactical levels. At the tactical level, capacity building is essential for security forces and civil personnel for effective explosive incident countermeasures. The most significant factor in mitigating IED incidents is training. It was observed that only training could reduce casualties of both civil and military personnel by 80 percent. Capacity building includes quality training, awareness and risk education for all personnel working in explosive threat environments. Capacity building of training institutions is also vital for realistic training, and the facilities like the simulator, model room, detection dogs, and CIED village will improve furthermore. The qualifications and training for EOD, IEDD and CMD teams should not be compromised; failure to train personnel properly may cause deaths and injuries.⁴⁰ Therefore, explosive incident countermeasures (EIC) tasks must be taken very seriously and should consider vital humanitarian support to the nation and the world. Almighty Allah says in the Holy Qur'an, "...Whosoever kills an innocent human being, it shall be as if he has killed all mankind, and whosoever saved the life of one, it shall be as if he had saved the life of all mankind..."⁴¹

⁴⁰ Hoque (2021), Op Cit, p 71.

⁴¹ The Holy Quran, Surah Ma'idah (The Table Spread with Food), Chapter 5, Verse 32.

Recommendations

The paper floats the following recommendations:

- a. A comprehensive EIC defeat framework needs to be formulated by AFD and Army Headquarters at strategic, operational, and tactical levels.
- b. Necessary SOP and policies at tactical level need to be formulated at Army Headquarters, Bangladesh Army.
- c. The authorised institutions should carry out capacity building training with international standards of the UN, UNMAS, IMAS and SOP of Bangladesh Army.

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SYLHET- SHATTERED BY FLOOD AND THE ROLE OF BANGLADESH ARMY IN REINSTATEMENT: CHALLENGES AND PREPAREDNESS FOR FUTURE

Lieutenant Colonel Sami Ud Dowla Chowdhury, psc

Abstract

Bangladesh is a riverine country. Rivers play a significant role in our socio-cultural existence as well as the economy and growth of our nation. However, due to its location on the Ganges and Brahmaputra delta, Bangladesh is particularly susceptible to flood. A severe flash flood which occurred due to excessive rainfall and flow from upstream regions of neighboring countries in May 2022 had disastrous results. The situation suddenly deteriorated in the majority areas of Netrokona, Sunamganj and Sylhet. The government had promptly deployed Bangladesh Army to the affected districts to execute an extensive rescue operation which was known as ‘Operation Plabon’. Bangladesh Army once again demonstrated their capabilities through unwavering confidence and positive attitude in times of national emergency and crisis. During the operations, Bangladesh Army faced various challenges on ground. The experience of this operation has paved the way for future preparedness to tackle any situation which may occur during such types of calamities.

Keywords: Riverine country, severe flood, affected area, national crisis, rescue operation, preparedness for future.

Introduction

Bangladesh is particularly vulnerable to floods and natural calamities because of its location near to the Indian Ocean and the Bay of Bengal. Mr. AKM Saiful Islam¹ analyzed the data of flood of last 35 years and found that rains were more unpredictable in Bangladesh. Similarly, water of many rivers rise above safety levels more frequently than before. During an interview regarding the flood situation of Bangladesh, Mr. Islam told Al Jazeera² that “The last seven years brought five major floods, eroding people’s capacity to adapt, especially in the country’s northern and north-eastern regions”. In the context of Bangladesh, irrigation depends on water flow and small-scale flood is always necessary to support our agriculture. As a result, natural flow of water

¹ Islam, AKM Saiful, Director of the Institute of Water and Flood Management, BUET.

² Al Jazeera. As Bangladesh floods recede, fears of waterborne diseases. Floods News | Al Jazeera. Al Jazeera; 2022 [cited Aug 26, 2022]. Available from: <https://www.aljazeera.com/news/2022/6/23/as-bangladesh-flood-waters-recede-fears-of-waterborne-diseases>.

is constantly required to take the place of costly and time-consuming artificial irrigation. For centuries, Bangladesh has been enjoying this natural irrigation. This blessing, however, has now turned into a misfortune for Bangladesh.

The floods of 1974, 1988, 1998, 2004, 2007, 2008, 2017, 2020, and 2022 resulted in significant property damages and fatalities. If we analyze the flood incidents from 1972 to 2022, we can have an idea of overall flood damage, casualties, and affected individuals. Within last 50 years, around 83 flood incidents occurred where approximately 280 million people became victims of flood, around 45 thousand people died and the total amount of damage was worth 300 million USD.

Flood hampers daily activities and damages agricultural lands, homesteads, water supplies, sanitation system and the economic system. In addition to the multiple vulnerabilities, flooding exacerbates issues with water supply, adequate sanitation, and health. During any flood, the water supply and sanitation infrastructure are badly affected, which accelerate the spread of waterborne infections and poses serious health hazards. In addition, urbanization has an impact on social aspects like increased exposure as well as the hydrological and hydraulic processes involved in flooding. Changes in land use and human activity lead to more surface run-off, which increases flood depths and extents.

The paper will initially portray the shattered picture of Sylhet during flood in a limited scale. Conversely, its main purpose is to highlight ‘Operation Plabon’ carried out by Bangladesh Army and the lessons learnt which may play a pivotal role in future preparedness. In addition, the steps and control measures Bangladesh has taken so far to reinstate the flood situation have been discussed in detail.

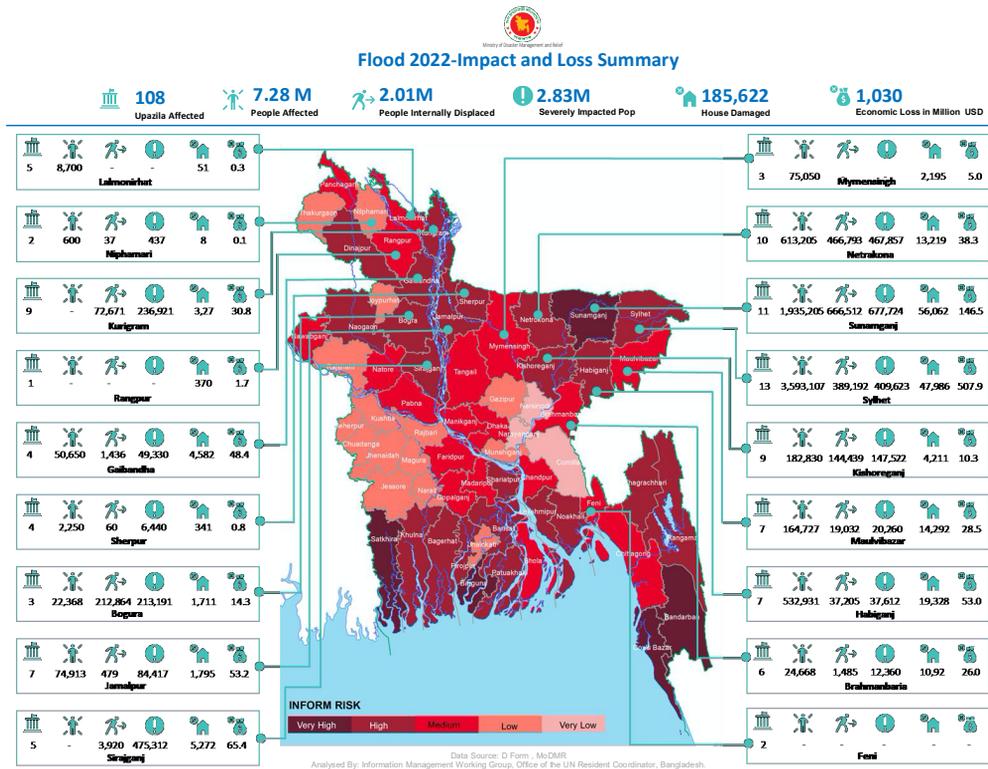
Sylhet- Shattered by Flood in 2022

In 2022, the North-Eastern region of Bangladesh faced torrential downpours and landslides from the upper riparian North-East region of India. Most of the areas of Sylhet and Sunamganj have completely been flooded by monsoon rains. Later from 15 June 2022, the additional districts in Sylhet and Mymensingh were flooded. The subsequent floods also washed away infrastructure, land, farmlands, homes, and livelihoods. The flood displaced hundreds of thousands of people and destroyed more than 150,000 homes, roads, and essential infrastructures. During this flood, a total of 388 unions, 61 upazilas and 14 districts were affected either fully or partially.

In the flood-affected areas of Sylhet and Sunamganj districts have had a greater impact in terms of fatalities, injuries, and infections. According to the data collected from Sylhet Division, around 105 unions and 5 municipality districts from 13 upazilas were all drowned, and about 3 million people were trapped³. Map-1 gives data on impact and loss.

³ ‘Over 30 lac homeless, 40,000 houses destroyed in flood-hit Sylhet’, Available at: <https://www.tbsnews.net/bangladesh/over-30-lakh-homeless-40000-houses-destroyed-flood-hit-sylhet-450190>.

Map-1: Impact and Loss Summary - Flood 2022



Source: Website of Ministry of Disaster Management and Relief

Operation Plabon: Bangladesh Army in Reinstation

The Deployment

According to a press conference held by the local government administration⁴, over 40000 dwellings were destroyed by the storm, and around 2,52,784 people sought asylum in government shelter facilities. Road, air, and rail transportation were completely interrupted in the affected areas. The only practical means of communication were boats. However, there weren't enough boats in the impacted areas to be used for search and rescue or other activities. People were desperately looking for life-saving assistance, such as food, drinking water, first aid, safe housing, water sanitation facilities, etcetera.

To overcome the situation, on 17 June 2022, the government deployed Armed Forces⁵ from the **17th Infantry Division** and the **19th Infantry Division** to the regions of Sylhet and Netrokona, respectively. The main objective of the deployment was to manage and oversee a massive relief effort to deal with the country's flood catastrophe. The Army had to respond quickly with its own

⁴ United Nations Office of the Resident and Humanitarian Coordinator | Humanitarian Coordination Task Team, Flash floods humanitarian response plan 2022.

⁵ Official Press Release by ISPR [2022Jun19].

management, communications and administrative machinery to assist the civil authorities. The core purpose was to minimize the suffering of the flood affected people, providing humanitarian relief to prevent further loss of lives and property; and to assist local administration in any required situation. Experience has shown that the Army is fully effective in disaster management because of its robustness and can operate in all-weather condition. The Bangladesh Army labeled this rescue operation as 'Operation Plabon'.

General S M Shafiuddin Ahmed, the respected Chief of Army Staff, Bangladesh Army requested everyone to extend helping hand to the rescue operations in Sylhet after the Army was deployed. He ordered the members of Bangladesh Army to maintain their commitment to the valiant rescue efforts, carry out emergency relief operations and offer emergency medical aid to the populace. He made an emergency visit to the flood-affected areas of Sylhet region on 19 June 2022, followed by the deployment of Bangladesh Army in the affected areas⁶. During a relief distribution event at Bangabandhu Sheikh Mujib Hi-Tech Park and neighboring flood-affected districts of Companiganj upazila, Chief of Army Staff said that, "We can only deal with this catastrophe if we all work together. The military must work honestly and with a sacrificing attitude"⁷.

Photo- 01: The Chief of Army Staff, Bangladesh Army distributing reliefs among the flood victims



Source: UNB News

Honourable Prime Minister Sheikh Hasina expressed her gratitude to Bangladesh Army and other affiliated organizations for saving the lives of marooned people and deliver aid while putting their own lives in danger. On 21 June 2022, she paid a day-long visit to the struggling Sylhet region. During the discussion on the current flood situation in Sylhet and the rehabilitation of the afflicted people at Sylhet Circuit House, the Honourable Prime Minister cited, "I submitted those photographs to the army head, our office, divisional office ... so they have been able to save the victims,"⁸.

⁶ 'Army Chief emphasises solidarity to deal with any disaster', Available at: <https://www.tbsnews.net/bangladesh/army-chief-emphasises-solidarity-deal-any-disaster-445906>.

⁷ 'Military, admin should work together', Available at: <https://www.thedailystar.net/news/bangladesh/governance/news/military-admin-should-work-together-2943896>.

⁸ PM Hasina: Adequate measures taken to tackle floods across country [Internet]. Dhaka Tribune - Current & Breaking News Bangladesh & World. 2022 [cited 2022Aug24]. Available at: <https://www.dhakatribune.com/bangladesh/2022/06/21/pm-hasina-visits-flood-hit-sylhet>.

Photo-02: The Honorable Prime Minister Sheikh Hasina distributing reliefs to the flood victims of Sylhet



Source: FOCUS Bangla

Role of Bangladesh Army during the Operation

Members of Bangladesh Army were given the important tasks of transporting flood victims to safer locations, managing temporary shelters for them in coordination with the civil administration, arranging food and water supplies that were safe to consume, providing medical assistance, and working with the civil administration to ensure the security of critical government facilities like power plants and food storage facilities. Bangladesh Army carried out important role under ‘Operation Plabon’.

Emergency Role

Toll Free Hotline for the Flood Affected People. A disaster helpline was to offer counseling and assistance to people during and after disasters. It is crucial to work relentlessly to make it easier for the affected people to communicate, when communication tools like cell networks, roads, etc. are destroyed by natural forces. The majority of flood victims from remote and distant places were unable to even contact the rescue teams. The Bangladesh Army established a series of toll-free helplines for the Sylhet and Sunamganj flood victims at a critical juncture. A list of 12 mobile numbers⁹ was generated and made available to the general public for support requests. In order to encourage residents of the two areas to call the helplines and request the Army's assistance without incurring any costs. The Inter-Services Public Relations (ISPR) Directorate distributed press releases and televised media releases for greater outreach and awareness.

⁹ Army launches toll-free flood helpline for Sylhet, Sunamganj [Internet]. Dhaka Tribune - Current & Breaking News Bangladesh & World. 2022 [cited 2022Aug24]. Available from: <https://www.dhakatribune.com/nation/2022/06/18/army-launches-toll-free-helpline-for-flood-hit-people>.

Emergency Medical Response for Water Borne Diseases. In mid-June, many people started suffering from various water borne ailments for flood. The Ministry of Health Control center regularly collected the information regarding waterborne disease cases including acute watery diarrhea, skin diseases, respiratory and eye infections, snake bite, near drowning and injuries by lightning, etc. From 17 May to 7 July, a total of 16860 people were affected by the waterborne diseases, among the cases almost 75% were the patients of diarrhea. Bangladesh Army was continuously in touch with the affected people and different agencies for assessing the needs of the people and to serve accordingly. The Army Medical Team also provided emergency transfer of endangered patients from distant areas to the District Sadar Hospital. A total of 23 combined medical camps were run by the Bangladesh Army to provide better and extensive treatments to more than 16000 people.

Rescue of Stranded People from the Distant Areas. One key responsibility bestowed over the Army was to operate an extensive rescue effort for the people stranded in the remote areas of Sylhet and Sunamganj. In the very first week of the operation, the Army rescued 2,010 flood victims from Sylhet and Sunamganj and brought them to various shelters. As many as 472,856 people have been taken to around 1,605 shelter centers in a combined effort of the Armed Forces and local authorities.¹⁰

Photo-03: The Army Rescue Team while Shifting the Stranded People to a Shelter Centre



Source: Author's Collection

Rescue of Tourists - an Excursion Turned into a Survival Thriller. A group of 21 students of Dhaka University (DU) were scheduled to visit Shimul Bagan and Barikka Tila and return to Dhaka.¹¹ As the heavy rain started flowing all over sunamganj, their leisure trip turned into a nightmare as they were trapped at Pansi Restaurant while visiting Tanguar Haor. After a

¹⁰ Flash floods humanitarian response plan 2022 United Nations Bangladesh Coordinated Appeal (July - December 2022) in Bangladesh [Internet]. United Nations. United Nations; 2022 [cited 2022Aug25]. Available at: <https://bangladesh.un.org/en/188010-flash-floods-humanitarian-response-plan-2022-united-nations-bangladesh-coordinated-appeal>.

¹¹ Sarker R. After rescue from flooded Sunamganj, students tell a tale of Horror [Internet]. bdnews24.com. 2022 [cited 2022Aug24]. Available from: <https://bdnews24.com/bangladesh/after-rescue-from-flooded-sunamganj-students-tell-a-tale-of-horror>.

distress call to the National Emergency Service (999), around 100 people, including 21 students of Dhaka University and 15 students of MIST were rescued by Bangladesh Army from Chhatak upazila of Sunamganj. Army Chief General S M Shafiuddin Ahmed met the students and took note of their physical and mental health after the ordeal. The students, their parents and the concerned department of Dhaka University expressed their heartiest gratitude to the Bangladesh Army after their vigorous attempt in rescuing the stranded students.

Photo-04: Dhaka University students rescued by the team of BD Army



Source: Author's Collection

Safe Keeping and Transferring of Money from Sonali Bank. The ATM booths in Sunamganj were out of commission and completely swamped by floodwaters. The deluge was also causing ATM booths in Sylhet to fail one after another. While several branches of the state-owned financial institution were also drowned by the flood, the Army members assisted in moving the money held in the bank's various branches throughout the Sylhet district to safe locations.

Assisting Sunamganj Jail Authorities and Inmates with Food. The Army made provisions for dry food and safe drinking water to the jail staff, members, and detainees. The Army did this at the request of the Sunamganj Jail Administration.

Reinstating Sylhet Osmani Medical College and Hospital. Flood water reached Osmani Medical College and Hospital and cut off the power as Sylhet flood scenario worsened. The interruption was affecting the services provided by the Intensive Care Unit (ICU) and surgery department. The Army was then stationed there and worked continuously to stop landslides and water drainage.

Ensuring Safety of the Children's Vaccine in Collaboration with UNICEF Bangladesh. UNICEF Bangladesh typically runs district-wise immunization programmes for impoverished children. The important vaccines of children were in the isolated parts of Sunamganj which were in danger and under threat of being damaged due to heavy flood. Bangladesh Army extended its assistance to bring those vaccines to a secured location.

Restoration of Mobile Network and Communication. The Army played a crucial role in safeguarding communications by ensuring the safety of the equipment, base transceiver stations, etcetera of mobile phone companies at various sites.

Reimposition of Baraikandi and Kumargaon Power Substations. While the majority of Companiganj and Gowainghat Upazilas were under water, Army engineering team worked relentlessly to drain all floodwaters from the substations and maintain a steady stream of power.

Rehabilitation Effort in the Flood Affected Areas

Repair of Road. During an assessment and joint estimate by the Roads and Highways Department (RHD), the Local Government Engineering Department (LGED) and Sylhet City Corporation (SCC), approximately a total of 1,600 kilometers of roads were damaged due to flood in the Sylhet region, which is worth almost Tk 2,100 crore. Bangladesh Army established four temporary camps in Sylhet and Sunamganj to repair flood-damaged roads. Bangladesh army conducted an extensive rehabilitation project from Gowainghat Bypass Stand to the Gowainghat Government College Gate. A total of around 2 kilometers of road was destroyed by flood. Additionally, the crucial Kataganga Bridge over Telikhal and Sylhet Biswanath Road were repaired.¹²

Contribution to the Prime Minister's Relief Fund. Bangladesh Army planned to provide a significant financial contribution for the post-flood rehabilitation of the affected districts. The Chief of Army Staff, General S M Shafiuddin Ahmed, presented Honourable Prime Minister Sheikh Hasina with a check worth Tk 100 million¹³ on July 13, 2022, on behalf of the Bangladesh Army in support of the flood victims in Sylhet and other north-eastern regions of Bangladesh.

Photo-05: Chief of Army Staff handing over a cheque of Tk 100 million to Honourable Prime Minister Sheikh Hasina for the flood-affected people



Source: The Financial Express

¹² Official press release by ISPR [2022Aug 02].

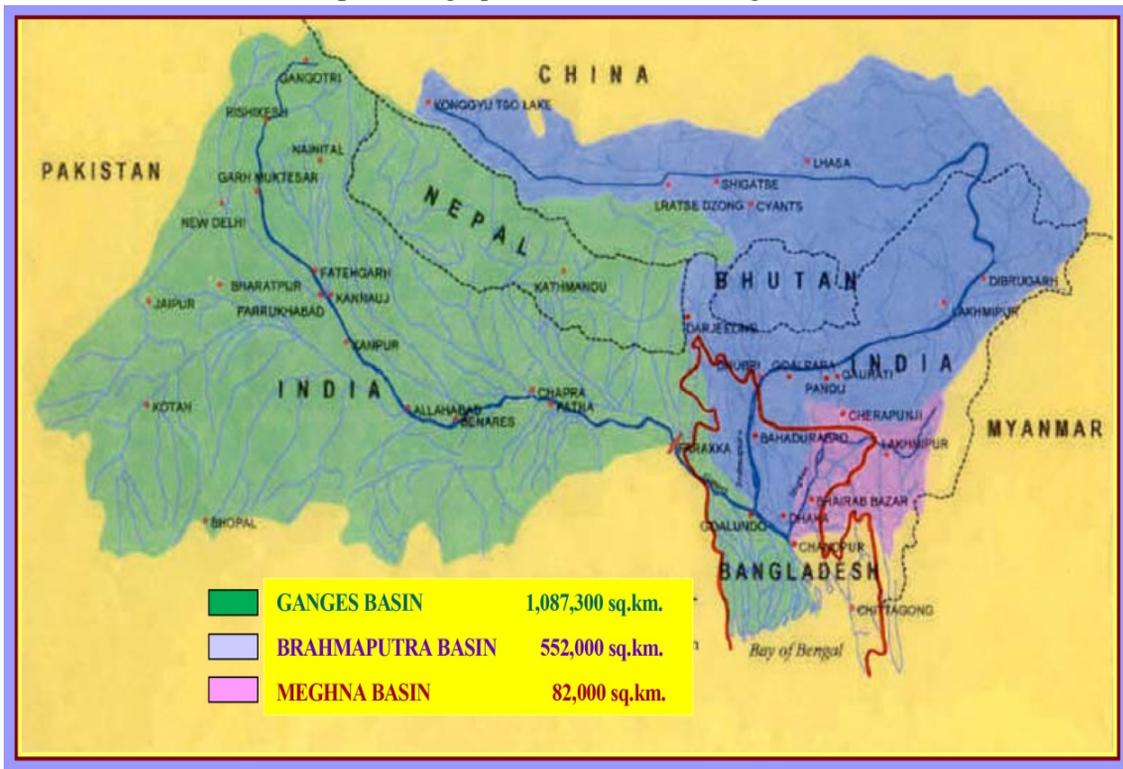
¹³ The Financial Express. Army Chief hands over TK 100 million to PM for flood victims [Internet]. The Financial Express. 2022 [cited 2022Aug24]. Available at: <https://thefinancialexpress.com.bd/national/army-chief-hands-over-tk-100-million-to-pm-for-flood-victims-1657809814>.

According to a news release from the ISPR, all members of the Bangladesh Army had donated their one day's salary to the Prime Minister's Relief and Welfare Fund in addition to their active participation in the devastated areas.

Challenges for Bangladesh

Geographical Location. The ecology and way of life for 150 million people in Bangladesh, a country of rivers with an area of around 144,000 square kilometers, depend heavily on rivers and their resources. There are 230 tributaries in Bangladesh, which make up 7% of its total land area. The Ganges, Brahmaputra, and Meghna are three important rivers that have a significant impact on the formation of the Bengal Delta, which includes the nation. The aggregate basin area of these significant river systems is approximately 1.72 million square kilometers¹⁴, which are dispersed across China, India, Nepal and Bhutan. Bangladesh is being the lowest riparian nation and having low topography in the basin where these three major rivers discharge into the Bay of Bengal, which runs through the country's center.

Map-2: Geographical Location of Bangladesh



Source: Author's Collection

¹⁴ Water Resources Modeling of the Ganges-Brahmaputra-Meghna River Basins, Available at: https://www.researchgate.net/publication/229859415_Water_Resources_Modeling_of_the_Ganges-Brahmaputra-Meghna_River_Basins_Using_Satellite_Remote_Sensing_Data1.

The ability of the flood plains to store water is diminished by the building of embankments in the upstream catchments. Unplanned and uncontrolled road and highway building in flood plains without sufficient openings causes flow blockages. Drainage may be hampered by the frequently occurring low pressure zones and storm surges in the Bay of Bengal. When these impacts coincide with the major rivers' peak floods, the intensity of flooding is at its worst.

Climatic Cause. The recurrence and severity of flooding is affected by climate change. The impact of tidal surges increases and river drainage impedes, as sea levels rise. Rapid and increased runoff from deforested catchments in steep areas leads to more severe flooding. Because of this reliance on sea level, changes in land heights are attributed to similar shifts in sea level. As sea levels rise around the world, more silt is deposited on land, causing land elevation to gradually fall. The resulting lower river levels causes more flooding when rivers overflow their banks at high tide. Areas along the coast of Bangladesh are experiencing a rate of relative sea level rise of 7 millimeters per year. By 2050, scientists anticipate a relative sea level rise in the Bay of Bengal of 83 to 153 centimeters. When the sea level rises, rivers' base levels also rise, reducing the gradients of river flow.

Riverbed Degradation. One of the most frequent events that alter riverbed level in Bangladesh is riverbed deterioration. Only around 30 years ago was the old Brahmaputra River used as a storm navigation channel; today, it is an abandoned canal. Due to riverbed erosion and resulting bank overflow, the rivers have lost their capacity to convey water. Flooding in Bangladesh has increased as a result of this circumstance, because it transports a lot of sediment during the monsoon. The Bay of Bengal's spring tide prevents floodwater from draining into the sea, which increases monsoon flooding.

Terrestrial Pattern. Seasonal flooding regime characterized by means of inundation land types. Generally, land of Bangladesh can be classified into 5 orders. Normally, 20-25% area of the country is submersed during every monsoon from June to September. In case extreme flood events 40-70% area can be submerged.¹⁵ High lands are positioned substantially in the western, south central, northeastern and southeastern regions of Bangladesh.

Influence of Tides and Cyclones. The frequent development of low-pressure and storm swells in the Bay of Bengal can hamper drainage. The severity of flooding is greatest when the peak floods of the major channels coincide with these effects.¹⁶

¹⁵ The Associated Programme On Flood Management, Available at: http://www.floodmanagement.info/publications/casestudies/cs_bangladesh_full.pdf.

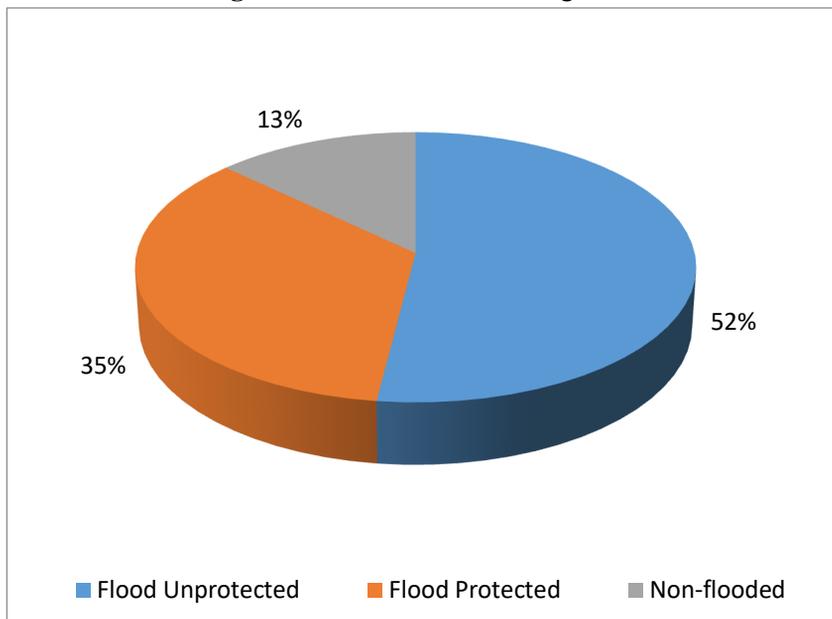
¹⁶ Changing Climate; Bangladesh Facing the Challenge of Severe Flood Problems; A Comparison of Flood Management between Bangladesh and the Netherlands, Available at: <http://www.diva-portal.se/smash/get/diva2:833342/FULLTEXT01.pdf>.

Preparedness of Bangladesh to Fight Against Flood

Structural Measures

The government placed focus on preserving Medium High and Medium Low Lands from floods through the construction of embankments in order to protect people's lives and property, livelihoods, food, and other issues. Bangladesh has carried out around 628 large, medium, and small-scale FCDI projects since the 1960s. The total amount invested was \$4.0 billion USD. It protected 5.37 million acres of land from flooding, or around 35% of the area. Figure 2 depicts an area that is flooded, not flooded, and flood-protected.

Figure-1: Flood Status of Bangladesh



Source: Author's Construct

Table 1 lists a picture of structural measurements.

Table-1: Structural Measures for Flood Management

Task	Quantity
Embankment	10000 km
Drainage Channel	3500 km
Drainage Structure	5000 nos
Dam	1 no
Barrage	4 nos
Pump House	100 nos
River Closure	1250 nos

Source: Author's Construct (data collected from Ministry of Disaster Management and Relief).

Non-Structural Measures

It has been discovered that persons living in the Medium High and Medium Low Lands are not safe from flooding during moderate to extreme flood events, despite all the structural operations that have been undertaken to protect them. The government recognized the significance of non-structural measures for reducing flood damage. Early flood warnings can prevent loss of life and property. The government learned from the devastating flood of 1998 and chose to implement nationwide real-time flood monitoring. With its network of 85 Flood Monitoring Stations, it currently delivers real-time flood information and early warning with lead-times of 24 to 48 hours across the entire country.¹⁷

Modification in Flood Management Strategies

Many reforms to flood management strategies were adopted by the government after the catastrophic flooding in 1987 and 1988. All courthouses of critical significance will be constructed above the once-every-100-years flood level, as per government decree. The government has also agreed to establish schools in flood-prone regions with the option of using them as emergency refuges during floods. Therefore, all of the national highways were upgraded to conform to the new criteria. The government also took action to halt flood plain encroachment and enacted legislation to regulate building in flood zones and moist areas. Based on this idea, the Compartmental Pilot Project (CPP), Tangail was built as a test bed. The land topography and micro-hydrological zoning inform the division of the project into multiple components.

For flood prevention, the government is increasingly prioritizing non-structural measures. In particular, the government has taken the tack of encouraging citizen participation in flood prevention and preparedness.

Recommendations

Basing on the study the following recommendations have been made:

- a. The government should take the initiative to develop the leadership and capabilities needed to fully implement the National Plan for Disaster Management (NPDm) at the local and national levels.
- b. In the coastal areas, sustainable structural solutions including embankments and revetments along the rivers, hard material protection, and polders to minimize the casualty of flood.
- c. A regulatory body must be established to oversee and guarantee the rapid implementation of the government's initiative to build 1000 flood shelters across the nation¹⁸.

¹⁷ Hossain, Md. Sazzad, Flood Forecasting and Warning in Bangladesh, Available at: <https://public.wmo.int/en/resources/bulletin/flood-forecasting-and-warning-bangladesh>.

¹⁸ Govt to build 1,000 flood shelters: State minister for disaster management, Available at: <https://www.thedailystar.net/news/bangladesh/development/news/govt-build-1000-flood-shelters-state-minister-disaster-management-3076676>.

- d. It is necessary to deter deforestation in coastal and flood-prone areas through community awareness and involvement programs.
- e. The Flood Forecasting and Warning Center, BWDB, Bangladesh (FFWC) must concentrate on expanding the distribution of flood warning and forecasting information and services to all flood-prone areas¹⁹.
- f. Continuous dredging of the rivers and channels and dispersion of the dredged sediments on the delta plain will not only increase elevation of the land, but will also increase the capacity of the rivers²⁰.
- g. Indigenous low cost solutions such as changing the housing structures and crop patterns can help reduce flood damage.
- h. Implementation of an improved real-time flood and drought control warning system can reduce damage caused by flood.

Conclusion

Flooding is a natural phenomenon for Bangladesh that cannot be avoided. Every year during monsoon, the vast area of Sylhet is flooded. Experts argue that unplanned construction of dams in haor and non-occupation or excavation of rivers have resulted in repeated floods in Sylhet region. Homes, educational institutions and offices were submerged in the catastrophic flood. About 70 people were killed and more than a million people lost their home in this flash flood. Considering this, Bangladesh must appropriately adapt flood control methods, and effective policies must focus on reducing flood damages, especially in Sylhet zone. Bangladesh requires a humanitarian coordination system to establish a consultative process to review disaster preparedness and response arrangements in coordination with relevant experts. Based on the requirement and the severity of the situation, emergency operations centres can also be activated at all levels for the management and coordination of the response.

Bangladesh has already started working on a National Plan for Disaster Management (NPDM) 2016-2020²¹, which has a number of objectives that reflect the country's alignment with the SFDRR (Sendai Framework for Disaster Risk Reduction, 2015-2030). This is essentially a set of goals that allow operationalizing the aims by identifying priority actions, providing a roadmap for implementation, incorporating disaster management aspects into sectorial plans.

Since its inception, Bangladesh Army has always stood by the needs of the country. Whenever any assistance was asked by the civil administration, Bangladesh Army always

¹⁹ Hossain, Md. Sazzad, Flood Forecasting and Warning in Bangladesh, Available at: <https://public.wmo.int/en/resources/bulletin/flood-forecasting-and-warning-bangladesh>.

²⁰ 'Environmental Impact of Dredging and IWT Development', Available at: https://www.unescap.org/sites/default/files/pub_1836_ch3.pdf.

²¹ National plan for disaster management (2016 2020) [Internet]. <http://www.modmr.gov.bd>. Ministry of Disaster Management and Relief; 2017 [cited 2022Aug26]. Available at: [https://modmr.portal.gov.bd/sites/default/files/files/modmr.portal.gov.bd/policies/0a654dce_9456_46ad_b5c4_15ddf8c4c0d/NPDM\(2016-2020\)%20-Final.pdf](https://modmr.portal.gov.bd/sites/default/files/files/modmr.portal.gov.bd/policies/0a654dce_9456_46ad_b5c4_15ddf8c4c0d/NPDM(2016-2020)%20-Final.pdf).

responded positively by extending their generous hands in the quickest possible time. As an organization, today Bangladesh Army is well organized, well equipped and well prepared to fight against any challenges and ever ready to serve the nation and its people.

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LEADERSHIP TRAITS IN ASYMMETRIC WARFARE – OPTIONS FOR BANGLADESH ARMY

Lieutenant Colonel Imtiaz Mahmud, BSP, afwc, psc

Abstract

Bangladesh Army is likely to fight against potential adversaries with her conventional efforts. Yet, at some point after the conventional fighting capabilities are diminished, adapting Asymmetric War (AW) strategy by Bangladesh Army cannot be overruled. Bangladesh will have to face severe challenges in the asymmetric environments due to its inconvenient geographical location. Certainly, superior strength and advanced technology will pose additional challenges to Bangladesh Army when conventional methods and traditional command and control structures will be absent. To overturn the power disparity, Bangladesh Army leaders need to display their efficient leadership. AW being a very different environment from conventional one, the leadership will demand a few additional qualities or traits that need to be unified with the leadership for the desired outcome. This study endeavored to find out such leadership qualities. The findings of the study display that the present traits are partially suitable to meet the challenge of future conflicts. Again, few of the traits need substantial modifications in their explanations. The study also reveals that to meet the future challenges few new traits may be included with the existing traits to make Bangladesh Army leaders more competent to lead in an asymmetric environment.

Keywords: Asymmetric, Leadership traits, power disparity, Emotional Intelligence, innovations.

Introduction

Warfare is becoming complex day by day. With the advancement of technology and rapid innovations in all fields, future warfare will be more complex. The dynamics of world politics also play an important role to determine the nature of the conflict. Today, traditional borders are no longer strong enough to contain powerful nations from invading the weaker ones for achieving a political gain. At the same time, today the threat not only generates from the neighbours, but also from both inside and far beyond the traditional boundary. In such a complex situation, the weaker states or even non-state actors find it difficult to counter the superiority of powerful nations. Hence, Asymmetric Warfare (AW) is an option for the weaker states or non-state actors to attain parity with stronger states even with their numerical inferiority and weaker combat power.

The AW is a mode of warfare used by the weaker side to fight against strong. In the modern context, AW is increasingly considered as a component of fourth-generation warfare. In such an environment, the weak has no option to match the opponents. On the contrary, conventional warfare can be adopted in a parity situation. Arguably, the weapons and technology may remain the same in both the environments. For example, when a corvette's weapon system fires against a destroyer

then it can be termed as AW. Again, the same weapon system may be used against another corvette in conventional warfare. The unorthodox use of the strategy by the weaker side to bring balance in conflict is the main essence of the AW strategy. Analysis of war conducted in the last 200 years shows winning percentage of the weaker forces that adapt AW strategy is in rise. The success of the AW of the weaker nations or non-state actors often provides an example for Bangladesh Army to utilize this concept.

The foreign policy of Bangladesh follows the axiom 'Friendship to all, malice to none'. Bangladesh Army will be always ready to defend its sovereignty and ensure national security. Then again, a huge population will be the source of power in such a situation. In logical prediction, the future AW will create fluidity and uncertainty due to the absence of conventional methods and traditional command and control structures. To overturn the power disparity with the invaders, Bangladesh Army leaders need to display efficient leadership. The leadership during AW will certainly demand few additional qualities or traits which need to be incorporated for desired outcome in an asymmetric environment.

The impact of leadership remains an utmost important phenomenon in any conflict. Bangladesh Army identified certain traits for its leaders to enhance the leadership styles at all level. These traits are in generic form and primarily focus on the peace and war time roles of the leaders. There are fourteen leadership traits in vogue in Bangladesh Army. Considering the diversity of future battlefield environment, the existing leadership traits seems inadequate to fulfill all the requirements. To make competent leaders mentally and psychologically ready for AW, present leadership traits may be reviewed. Again, additional leadership traits may need to be included, which will address the offensive spirit and make the followers understand clearly the psychology of the leaders in crisis situations. The new inclusion of the traits may enable the leaders to lead their men in asymmetric environment. Indeed, the role and importance of the leadership attributes will increase in future AW environment.

Historical Perspective of AW and the Trend of Future AW Environment

AW-The Background. In history probably the first asymmetric war mentioned was between David and Goliath which is recorded both in the Bible and the Quran. It's often found in the war history that AW being used as preferred tool of the weaker force to counter-balance its deficiencies to fight with a strong force. Through the analysis of roughly 200-year period covered by Singer's seminal work 'Correlates of War' data, it is observed that 'strong actors' i.e., those with anywhere from a 5:1 to 10:1 asymmetric advantage have been losing more and more asymmetric conflicts over time (Sadequzzaman, 2014)¹. The progressive timeframe can be seen in five different brackets in Table-1.

¹ Sadequzzaman, Lieutenant Colonel Md. (2014). Asymmetric Warfare: Role of Bangladesh Armed Forces in Future.

Table-1: Progressive Timeframe for AW

Timeframe	The Major Battles	Year	Result
1800-1849	The Greek War of Independence	1821-28.	Out of 34 asymmetric conflicts- <u>Strong Actors won 88.2%</u> <u>Weak Actors won 12.8%</u>
	The U. S. Second Seminole War	1835-42.	
	The First Zulu War	1838-42.	
	The First British-Afghan War,	1838-42.	
1850-1899	The Second Opium War	1856-60	Out of 69 asymmetric conflicts- <u>Strong actors won 79.5%</u> <u>Weak Actors won 20.5%</u>
	The Second Schleswig-Holstein War	1864	
	The Russo-Turcoman War,	1878-81	
	The Second Boer War	1899-1902	
1900-1949	The Russo-Japanese War	1904-05	Out of 31 asymmetric conflicts- <u>Strong actors won 65.1%</u> <u>Weak Actors won 34.9%</u>
	The First Balkan War	1912-13.	
	The Iraqi-British conflict	1920-21	
	The U.S. Nicaraguan conflict	1927-33	
1950-1998	South Vietnam	1961-65	Out of 36 asymmetric conflicts- <u>Strong actors won 45%</u> <u>Weak Actors won 65%</u>
	The Angola-Portugal War	1961-75	
	The conflict in Mozambique	1964-75	
	The Russo-Chechen War of	1994-96.	
2000- 2020	War in Afghanistan	2001-cont	Out of 124 conflicts most of the war being protracted by the weaker side.
	The Iraq War	2003-2011	
	Lebanon War	2006	
	Syrian Civil War	2011- cont	
	Libyan Civil War	2014- cont	
	Yemeni Civil War	2015- cont	

Source: Prepared by the Author through Content Analysis on AW

According to the Toft (2001) hypothesis, the progressive result of the conflict shows that, the chances of winning for the weaker actor are more due to the asymmetric strategy adopted by the weaker actors².

Vietnam War and Critical Analysis of Leadership

The Vietnam War was a major conflict after the Second World War which was fought in an asymmetric environment. Vietnamese supreme leader Ho Chi Minh and his military commander General Vo Nguyen Giap were the main architects of Vietnam’s success during this conflict. Both

² Toft, Ivan Arreguin. (2001). How the Weak Win War: A Theory of Asymmetric Conflict, International Security.

leaders displayed their distinctive leadership attributes to fight a superior army. Certainly, it also transmitted among the other tactical leaders during the war which turned the course of the war in favour of the North Vietnamese. In this war the crucial role played by leadership of the Vietnamese are given bellow:

Emotional Intelligence (Emotional Quotient- EQ). The leadership displayed by Ho Chi Minh in Vietnam war was unparalleled. Analyzing the leadership qualities of Ho Chi Minh, it was identified that EQ was his standout quality. While describing the leadership and management style of Ho Chi Minh in his paper, Dr. Lap (2019) mentioned that ‘the style of Ho Chi Minh has set the standard for a leader of the people, the deep sympathy between a leader and manager with the people’³.

Innovation. The study shows that Viet Cong used terrain and weather against technologically superior force innovatively. They used an underground tunnels network to hide and maintain communications. The ingenuity of those tunnels as well as the surrounding booby-traps of entry points were fascinating and in many cases humbling (Glaveski)⁴. In addition, General Giap and the leaders of the Viet Cong used innovation in their propaganda campaign.

Initiative. The military leaders commanded by General Giap displayed their initiative at every level during the war. The Tet Offensive was one of the finest examples of initiative by an inferior force to offset the power imbalance and achieve strategic objective by taking calculative risk. Hence, the initiative Vietnamese leaders took during Tet Offensive evidenced to be the pivotal point in the war.

High Energy. During the jungle warfare, the Viet Cong troops displayed agility to fight the technologically superior US troops. Throughout the war, the North Vietnamese demonstrated impenetrable mindset, resilience, tenacity, an unbreakable work ethic, and absolute refusal to give up (Glaveski)⁵.

Critical Analysis of Leadership of Hezbollah in Lebanon War-2006

Hezbollah surfaced in the scene during the 1st Lebanese Civil War. During Lebanon war 2006, Hezbollah replied Israeli’s conventional offensive with their rocket attacks and also guerrilla warfare from hardened of hidden positions. Within the disparity of power, the significant leadership attributes displayed by the Hezbollah leadership are:

Innovation in Strategy. During 34 days conflict Hezbollah adopted innovative technologies like tunnels and coordinated rocket attacks on Israeli Defense Force (IDF). The sagacity displayed by the senior leaders of Hezbollah bears testimony to sound planning to counter the superior adversary.

³ Dr. Lap, Nguyen Huu (2019), The Leadership & Management Style of Ho Chi Minh Practical Value and Significance.

⁴ Glaveski Steve. Innovation Lessons from The Vietnam War. Online paper. Collective Campus.

⁵ Glaveski Steve. Innovation Lessons from The Vietnam War. Online paper. Collective Campus.

Integration of Mass People through Selfless Loyalty. To deter the superior military, integration of the mass people was crucial. Through their ideological belief and selfless loyalty toward the cause Hezbollah leaders not only influenced their troops rather motivated the mass people to support their cause.

Foresights. Hezbollah's leadership demonstrated foresights in their conduct of the campaign. They identified inexperience of IDF in ambush on narrow trails and in village streets and exploited those efficiently. Again Hezbollah leaders had a clear vision that they needed to preserve their rocket and continue with the same volume of fire till the last day of conflict (Exum, 2006)⁶.

US War in Afghanistan

Fight Against Asymmetric Strategy. The USA launched “Operation Enduring Freedom” at Afghanistan after the 9/11 Attack to fight against global terrorism. The inferior Taliban force could not match up with the heavy airstrike by the USA Air Force and ground attack of Northern Alliance. American and British forces applied asymmetric means with great success in between the commencement of air campaign and the fall of Kandahar.

Flexible Approach of Coalition Forces. Flexibility and adaptability were keys to success for Coalition forces. Addressing the limitation of ground forces with the ability of Special Forces for adapting to the changes of the battle and well-synchronized fire and maneuver resulted in the success of coalition forces.

Trend of Future AW Environments

VUCA Environment. The AW of '60s-'70s rejuvenated due to the VUCA (Volatile, Uncertain, Complex, and Ambiguous) climate (Mubeen, 2020)⁷. The nature of future conflicts will have a few enduring characteristics like chaotic features of friction, VUCA environment, and use of advanced technology. Certainly, in future conflicts the conventional imbalance will persuade potential enemies to wage asymmetric warfare against the weaker state.

Use of Technology. In this age of globalization and an open market economy, the diffusion of technology is very fast, and more importantly, unstoppable (Sazzad,2020)⁸. Through the analysis of the future trend of warfare, it was found that it will take time to completely remove the human from the battlefield, yet pragmatic use of Unmanned Aerial Vehicle (UAV), Unmanned Ground Vehicle (UGV) and the use of Artificial Intelligence (AI) will be the new face of future conflicts.

Power Disparity. The technological advancement of the belligerent opponents will generate the power disparity. Again, the coalitions and alliances during possible conflict may change the power balance before or within the conflict. Consequently, the power disparity in the

⁶ Exum Andrew (2006). Hezbollah at War. A Military Assessment

⁷ Mubeen, General Mohammed Abdul, SBP, ndc, psc (ret'd). (2020). Personal Interview.

⁸ Haque, Major General Sazzad, ndu, psc. (Subject Expert). (2020). Personal Interview.

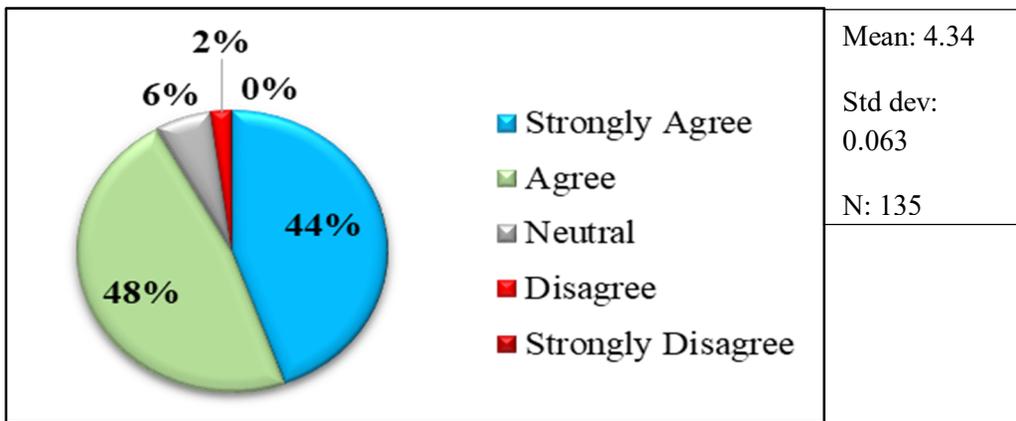
conflict will evolve the asymmetric environment. The consequences of power disparity and uncertainty in future asymmetric conflict will ultimately create fog and friction in the conflict zone.

Trend of Globalization and Regionalization. In present world order there are trend towards developing defence cooperation on a global scale. Besides, the development of connectivity and viable interdependency between regions and nations induce growing links between globalization and regionalization. This will create opportunities for great dispersion and access to high technology for any country to acquire and operate hi-tech weaponry (Caldwell, Floyd, Williams, Worswick, 2003)⁹.

Future Conflict and AW Environment in Bangladesh Parlance

The AW is a well-practiced concept of war history. The recent war resonates with the uniqueness of the concept due to its nobility to overturn the result in favor of the weaker side. Again, Bangladesh foreign policy is based on friendship with all her neighbours. Yet again, probability of involving in conflict to protect the interest of the country cannot be overruled. In such circumstances asymmetric environment may be pivotal (Figure-1).

Figure-1: Probability of Fighting Future War in Asymmetric Environment



Source: Survey Data Analysis and SPSS Output

Role and Importance of Leadership and Challenges in AW Environment

Behind the success of the comparatively weaker actors in the AW, leadership performs an important role. The impact of leadership will be more coherent in the AW environment where leadership will counterbalance the disparity of the war fighting efforts. In Bangladesh parlance, leadership will be the decisive factor in such conflict.

⁹ Caldwell, Floyed, William, Worswick. (2003) Major Caldwell D. W., Major Floyd N. H., Major Williams P. A. and Major Worswick R. J. The nature of future conflict and the implications for ADF interoperability: Building the future phalanx. GEDDES PAPERS 2003.

Role of Leadership in AW. Leadership will remain as the linchpin for any successful military efforts whatever domain or scale it operates. Moreover, the eternal elements of leadership will remain key segment at tactical levels. Therefore, personal relations, situational understanding, intuitive decision making and dynamic leadership will still be the key elements in fighting a war. (Terry 2015). Army leaders use their leadership traits to influence the under commands through trust and teamwork and pursue to achieve the organizational goal. Again, to inspire troops, leaders must instil a pervasive attitude to motivate their troops to advance under withering fire or hold a seemingly untenable position¹⁰ (Robert 2018). In an asymmetric conflict when a seemingly great plan failed to achieve the result, the change approach and personal charisma emerge to confront adversity head-on.

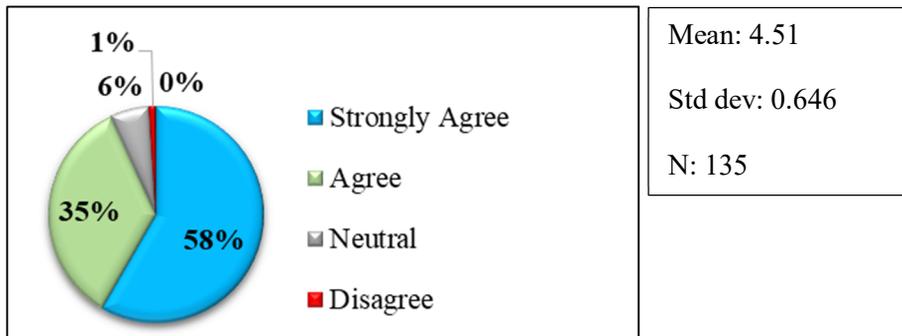
The Importance of Leadership in AW Environment. The leadership may play immense importance in AW. ‘There are essentially three components of AW; these are moral component, conceptual component, and the physical component. Moral and conceptual components are intangibles which Bangladesh Armed Forces can achieve by innovative means and effective leadership. The physical component includes the forces’ strength, size, capability, technology, weaponry, etcetera which are to be off-balanced by attacking the enemy’s vulnerabilities (Sadequzzaman, 2014)¹¹. Certainly, in a probable VUCA environment of AW making decisions requires courage, awareness and a willingness to make decision (Leadership Skills & Strategies). This is also certain that technological advancement will not replace the human factors in the military domain. Accordingly, a competent leadership style will be of paramount importance to augment the technological advancement and lead the follower even from a distance.

The Importance of Leadership in AW of Bangladesh Purview. Bangladesh Army largely depends on the leaders to deliver the best service to the nation. Bangladesh Army leaders are mostly people-oriented focusing the interpersonal relationship with their men. Leadership traits of Bangladesh Army can directly influence the moral and conceptual components of fighting power. Therefore, asymmetry in the physical component can also be influenced by the efficient leadership qualities. To deal with power disparity and the complexity of the warfare leadership needs to be reshaped. Therefore, the importance of revisiting existing leadership attributes and the inclusion of newer traits are apparent. The survey indicated that AW leadership will be an imperative element for future AW environment (Figure-2). Certainly, in future AW, the conflict environment will demand a more pragmatic leadership style.

¹⁰ Capt. Ron Roberts. (2018). 12 Principles of modern military leadership. Asymmetric Warfare gp.

¹¹ Sadequzzaman Md Lieutenant Colonel. (2014). Asymmetric Warfare: Role of Bangladesh Armed Forces in Future.

Figure-2: Importance of Leadership Traits in AW

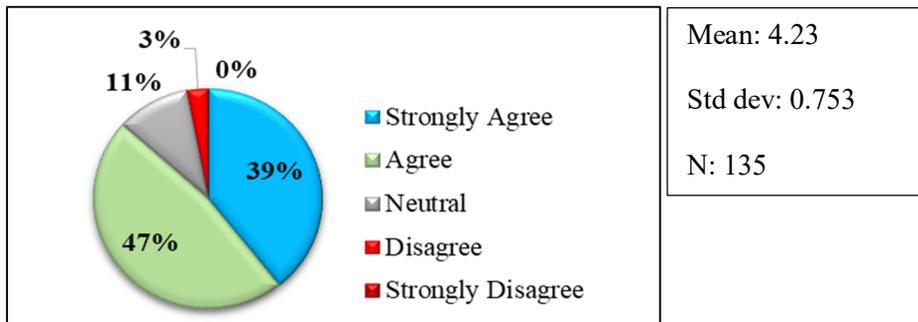


Source: Survey Data Analysis and SPSS output

Challenges of Leadership in AW Environment

Asymmetry in Combat Power. The combat power of any army denotes the capability to fight the adversary by using destructive or lethal force to attain the underlining victory. In the asymmetric environment, the asymmetry will be observed mostly in terms of firepower and protection. Both firepower and protection will facilitate the maneuver, therefore, all three combat powers may pose challenges for a weaker state. The survey result also reflects that efficient leadership will offset the deficiency of the combat fighting capabilities in AW (Figure-3). Moreover, the past AW during the Vietnam War or Lebanon War 2006 supports the survey result.

Figure-3: Impact of Efficient Leadership in AW



Source: Survey Data Analysis and SPSS output

Restricted Support. In the analysis of the past asymmetric conflict, it was observed that in most cases the weaker force support turn out to be restricted. It can be perceived that the future warfare may also have the same challenge for the weaker state. According to the procedure of war, the enemy will target the logistic bases and line of communications during conflict scenario. Therefore, destruction of the bases will drastically affect the operations. In the asymmetric conflict, the apparent challenges will be fighting in a logistics constraint situation. The leadership approaches to motivate the under command may ease up the situation, which also proved in previous conflicts in asymmetric environment.

Short and Intense vs. Protracted War. In the future conflict, the strong power will use lethal weapons to make the conflict short and intense to reduce the cost of the war and bring the decisive result by employing minimum resources. On the contrary, the weaker state will try to protract the war and cause more attrition to the enemy by engaging number of targets. Consequently, in the future conflict the weaker state to sustain the initial thrust of the stronger power and thereafter retaliate in a large span of time.

Qualifications of Present Leadership Traits for AW

Bangladesh Army uses a set of leadership traits or attributes in the leadership training which are revised in the different time frames. Numerous references are used to identify the set of leadership traits of Bangladesh Army. Most of the references contain similar explanations of the traits. However, analysing the previous war and considering the challenges for the perceived future conflict in the asymmetric environments, the existing traits are not enough.

Present Leadership Traits for Bangladesh Army. At present there are 14 leadership traits in vogue in Bangladesh Army¹². These are bearing, courage, decisiveness, dependability, endurance, enthusiasm, initiative, integrity, judgment, justice, knowledge, loyalty, tact, and unselfishness. The concept of Bangladesh Army leadership envisions a leader who is aware of his/her responsibilities, capitalizes on his/her strong traits, corrects his/her weaknesses, and is guided by the principles of leadership (BMA precis on Leadership).

Suitability of Present Leadership Traits

Suitability during Peacetime. During peacetime, leadership of the Army focuses on capability building through military training, administration, and maintenance responsibilities. Leadership development needs to have a few targeted qualities to practice for better leadership. Again, the heart of leadership is influence. Leaders with evidenced attributes of assistance, optimism, humility, and empathy to build trust with those around them which in turn allows for a high degree of influence during peacetime make cohesion of Army. The present attributes of Bangladesh Army leadership are workable but need moderation to address the change of the society and development of the army¹³.

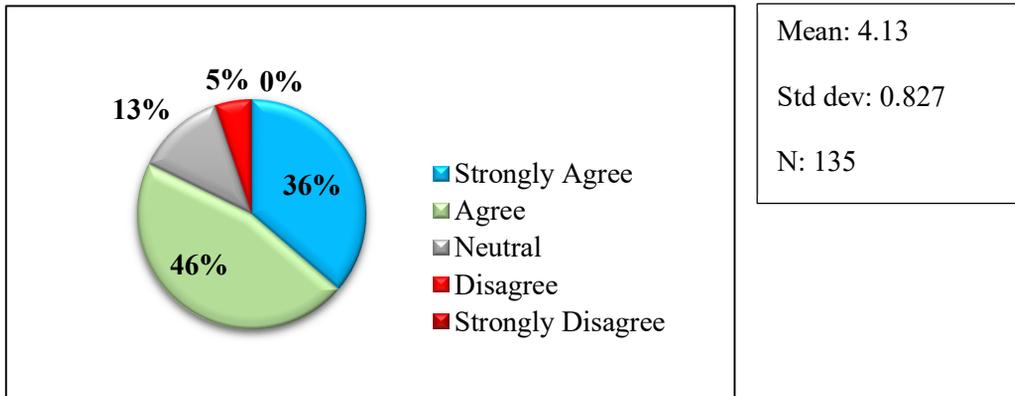
Conventional Conflict Situation. The collective effects of traits will be more condensed during the conflict scenario. The transformations of the leadership approaches of the leaders will be conspicuous and more prominent. The traits which seem to be vivid during peacetime may not create enough impact on leadership during the conventional conflict. In such situations, a leader will deal with the multidirectional threats, and concurrently he needs to use multiple means to counter the threat. Thus, existing leadership traits may not remain suitable in the irregularity of the conventional pattern of conflict scenarios.

¹² Leadership and Military Command, Bangladesh Army, 1996.

¹³ FGD conducted during research.

During Asymmetric Environment. Future war fighting will demand a new approach to leadership. The present leadership traits of Bangladesh Army will not be enough to fight future asymmetric warfare (Zakaria, 2015)¹⁴. Dynamic leadership traits will play as game-changers in AW in Bangladesh parlance. The survey result in Figure-4 indicates that challenges of future AW demand new types of leadership approach or traits.

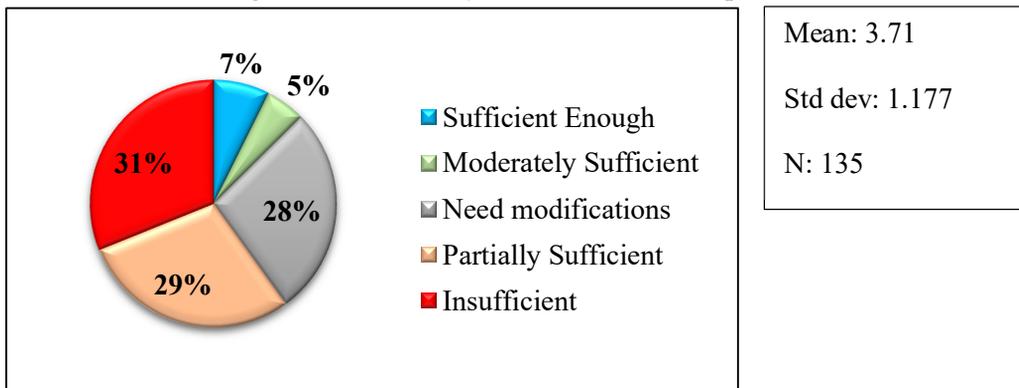
Figure- 4. Requirements of Newer Leadership for AW



Source: Survey Data Analysis and SPSS output

Do the Traits Sufficiently Address the Challenges? The AW may be fought as part of guerrilla warfare integration with the mass people. The effect-based operation with the small group may also make the adversary engaged throughout the length and breadth of the battlefield. Leaders need to use their self-awareness, self-regulation, and empathy to influence their men in a critical situation. Moreover, fighting under inadequate support, the leaders need to make innovation to maximize the use of resources and grounds. The survey result in Figure-5 denotes that the present traits are either insufficient or partially sufficient to meet the challenge of AW.

Figure-5: Sufficiency of Present Leadership Traits



Source: Survey Data Analysis and SPSS output

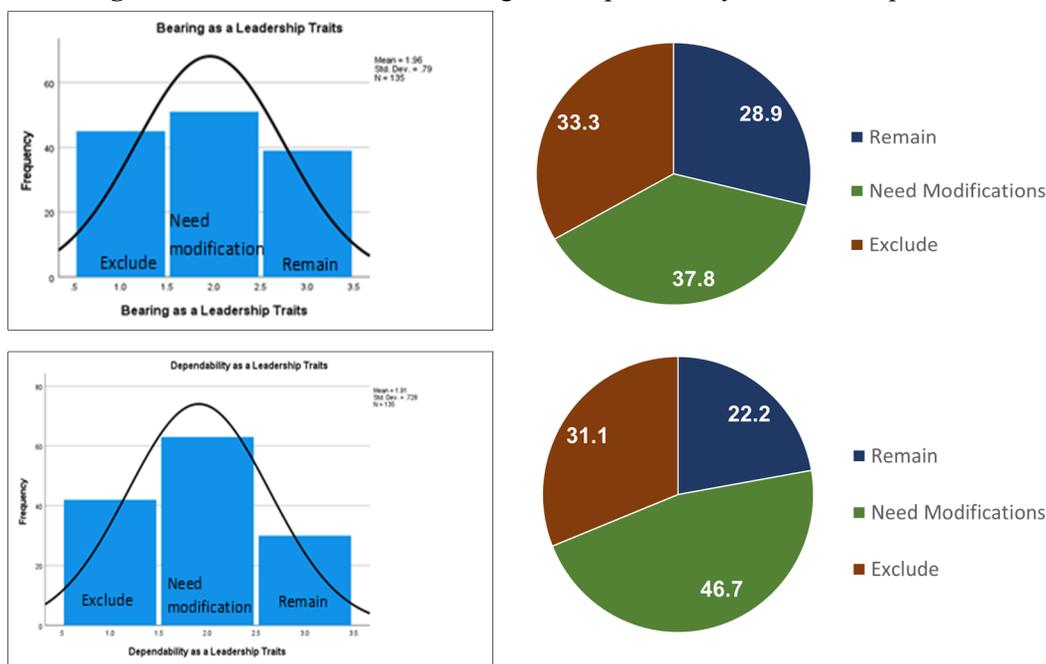
¹⁴ Zakaria S M Hussain, psc, Engr Lieutenant Colonel. (2015). The Role of Division Engineer Battalion in Asymmetric Warfare.

Justification of Exclusion of Traits. The leadership traits are imperatives for constructing the ultimate leadership style. Each attribute of leadership has an important role to play in making the prominent leader to lead even in an adverse environment. During the study it was identified that traits like bearing and dependability can be excluded as its impact can be merged with the other traits.

Bearing: Rationalisation of Exclusion. The trait ‘Bearing’ signifies by posture, desirable physical appearance, dress. In present circumstances, it is well inculcated in the culture of the Army. Therefore, a separate trait may be irrelevant for the development of the future leadership. In frequency analysis, the curve also shows the tendency towards the exclusion of the traits with the mean >2(1.96) (Figure-6).

Dependability: Rationalisation of Exclusion. Dependability mostly focuses on the knowledge, initiative and intellect of the individual. According to the study ‘Dependability’ may be redundant for the modern leadership practice as most of the hallmark factors addressed by the other traits. According to the survey data analysis the frequency curb also denoted the biasness towards the exclusion with the mean >2 (1.91) (figure 6).

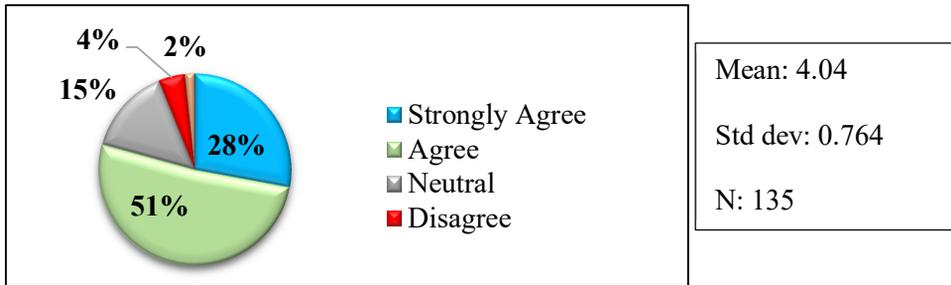
Figure-6: Rationalisation of Bearing and Dependability as Leadership Traits



Source: Author’s Own Construct (based on Survey Data Analysis and SPSS Output)

Modification of Leadership Traits. The existing traits are most pertinent for peacetime and conventional warfighting environment. All the traits contain a set of hallmark quality and have an explanation. The survey result in Figure-7 indicates that majority of the respondents gave their view for modifications of the existing leadership traits considering the future challenges.

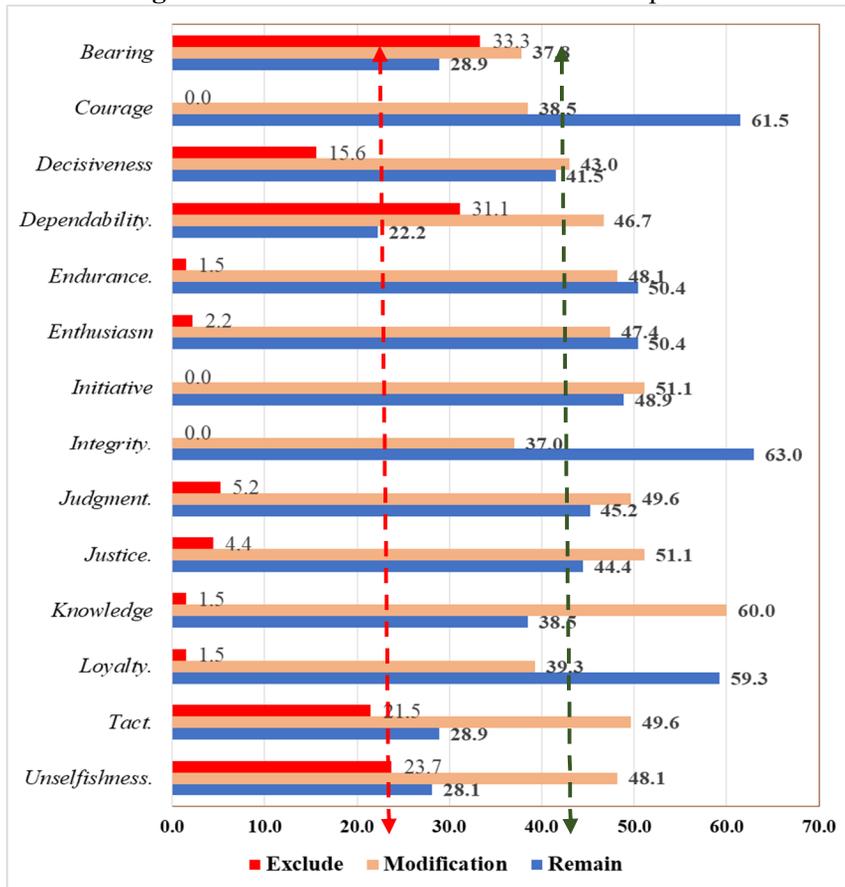
Figure-7: Modifications of Present Leadership Traits



Source: Author's Own Construct (Survey Data Analysis and SPSS Output)

Identifications of Traits Need Modification. The research identified that the leadership traits of Bangladesh Army need modifications to meet the changes of the future conflict environment. The leadership traits need a comprehensive change in the proper direction of the expected leadership for the Army. The survey result Figure-8 indicates that some of the existing leadership traits need modifications.

Figure-8: Justifications of Present Leadership Traits



Source: Author's Self-Construct (Survey Data Analysis)

In the survey results to identify the frequency the mean between 2 to 2.5 was considered for the modifications. Thus, traits like Decisiveness, Endurance, Judgment, Justice, Knowledge, Tact and Unselfishness need modifications.

Proposed Modifications

Decisiveness. The traits mainly focused on being authoritative, concise, and clear to give decision. With those factors the forthrightness and Self-confidence may be included in the explanation of the traits. In AW the leaders may need to give decisions without consulting the superior due to the absence of traditional command and control arrangement. Leaders' ought to analyze the situation and use self-confidence while giving decision.

Endurance. The attribute denotes the supreme mental and physical stamina of the leaders. The endurance is a leadership quality that is equally important in peace and war. Besides the mental and physical strength, the leaders should have high energy, resilience and positive attitude to meet up the challenges of the future AW. Moreover, in a crisis situation, such factors will increase the level of tolerance of the leaders and allow him to adjust with the chaotic situation.

Judgment. Taking the right decision in an ambiguous situation of AW, an attribute of sound judgment will be the prerequisite of good leadership. Therefore, leaders have to develop a logical and orderly thought process for quick decision making. Gillies (2013) also confirmed that 'the effective leader uses sound judgment to keep the entire chessboard in mind, even when focusing on an individual piece. A good decision made promptly is far better than an even stronger decision made too late'¹⁵. Thus, the require modification need to be included in the description of the attribute.

Justice. Impartiality is the watchword of the trait's justices. As a leadership trait justice encompasses wisdom and the ethical strongpoint of the leader, therefore, leaders need to display fairness and impartiality in taking any decision. In a conflict, leaders need to take independent decisions. During that time leaders need to make his call of justice assimilating with other traits like moral courage, judgment and unselfishness.

Knowledge. This trait represents professional knowledge and quality of understanding of the subordinates. A leader must pursue for achieving professionalism. Again, knowledge of the leaders must comprise both technical and tactical knowledge. In addition, leaders should have appropriate knowledge about his under command.

Tact. Tact is the quality of the leader where the leader handles the weird situations elegantly. The keen leaders remain calm in every situation and remain utmost courteous. Yet again, only the 'Tact' as quality may not have enough essentials to meet the challenges of future AW. A smart leader should use emotional intelligence to achieve more influence on the followers.

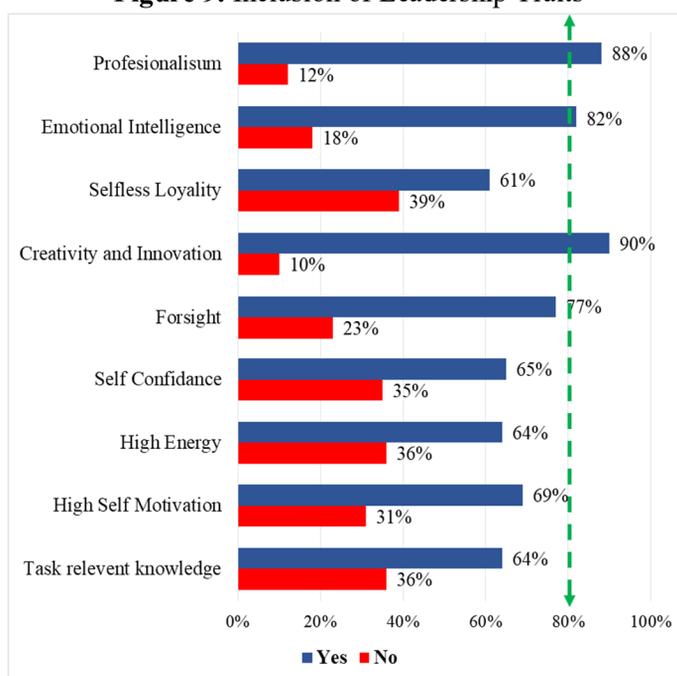
¹⁵ Gillies Gerald (2013), 12 Leadership Traits.

Unselfishness. Teamwork will be vital requirement for the future AW. Positive attitude, cooperation, trust, mutual respect and sound understanding need to be emphasised in the attribute. Basing on the survey results and FGD response the study found that description of the trait needs to be rationalized to meet the challenge of the future AW.

Inclusion of New Leadership Traits

Analysing the previous conflicts and considering the future trend of warfare the study proposes that professionalism, emotional intelligence, innovation, and creativity can be included in the leadership traits to meet the challenges of perceived AW situation for Bangladesh. However, during FGD most of the member's opined that emotional intelligence, innovation and creativity, and forthrightness can be included with the existing list. Moreover, all these traits qualified with more than 80% acceptance during the survey have been reflected in Figure -9.

Figure 9. Inclusion of Leadership Traits



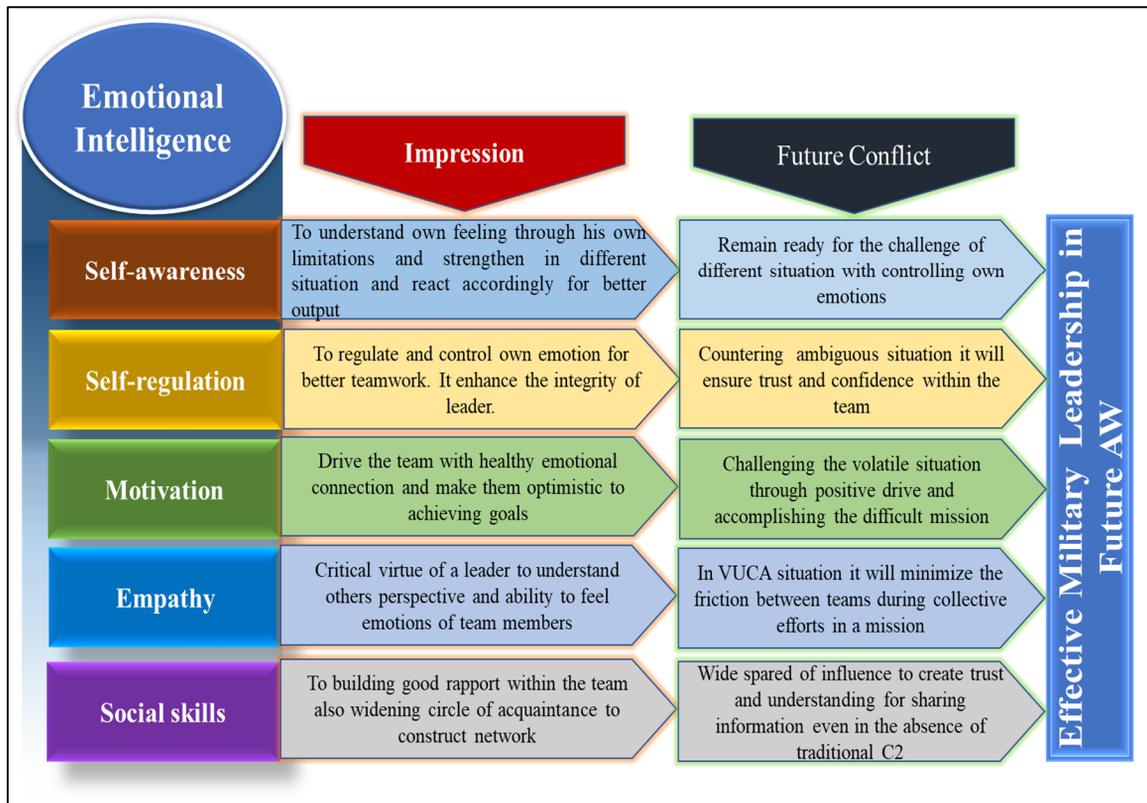
Source: Author's Own Construct (Survey Data Analysis)

Emotional Intelligence. Emotional intelligence- EQ (Emotional Quotient) is not new in the domain of the leadership, but in recent years it has become the key points of essential attributes of the leaders. It gives the opportunity to the leaders to remain compose during a serious situation and address the situation with better capacity. Daniel Goleman (2015) argues that emotional intelligence has five key elements i.e. self-awareness, self-regulation, motivation, empathy and social skills¹⁶. All those factors will be complementing the leadership in future

¹⁶ Daniel Goleman (2015), Emotional Intelligence, why it matters more than IQ.

conflicts which is shown in Figure – 10. These elements have significant impact on effective military leadership through controlling emotion, creating trust and reducing friction between teams.

Figure-10: Emotional Intelligence as a Leadership Trait



Source: Author's Own Construct

Innovation and Creativity. The trait ‘Innovation’ makes the leaders curious. Usually, innovative leaders are creative thinkers. They use their imagination and confidently communicate the ideas or thoughts. Moreover, they do not merely generate ideas or strategies, rather have the insight to identify or recognize the ideas of other members of the team. Again, creative insight comes from intelligent and non-judgmental sharing of information within the team and beyond. Often, for optimized innovation the leaders need to have the risk tolerance and strong mental strength to accept the failure. The same is also agreed by Zenger and Folkman (2014) in their research - innovation often requires some level of risk. These highly innovative leaders initiated warm, collaborative relationships with the innovators of the team¹⁷. Again Baumgartner (2011) argued that innovative leaders are not the micro-manager. They need to focus on the big picture and vision to achieve a greater goal. Otherwise, focusing on too many details leaders will lose sight of the big picture¹⁸.

¹⁷ Zenger and Folkman (2014), Harvard Business Review, 10 Traits of Innovative Leaders.

¹⁸ Baumgartner Jeffrey.2011. What is Innovative Leadership?

Professionalism. The trait ‘professionalism’ can be explained by the conduct and act of an individual in the best suitable way for his profession. The reliability of an individual is likely to be very crucial during an asymmetric environment when traditional C2 is absent. To acquire such attribute leaders need to be more focused on the responsibilities, positive to solve the problem, and having sound knowledge to prioritize the task.

Conclusion

The history of war is replete with examples where a comparatively weaker state won the battle despite having clear inferiority in strength and equipment. Often the leadership factors played an important role to counterbalance the shortfall in such cases. The Vietnam War was fought in a completely asymmetric environment. Again, Hezbollah being a non-state actor fought convincingly against technologically superior IDF. Leaders of all levels were very clear in their mission and displayed decisiveness in taking decisions.

The nature of future conflict is difficult to predict. Due to the use of advanced weapons, artificial intelligence, and more lethal and precision munitions, conflict in the future will be more fatal and volatile. Moreover, the widening conventional imbalance will induce enemies to wage asymmetric warfare in the future. In such intricate situation Bangladesh Army also needs to remain prepared for future conflict in an asymmetric environment.

Bangladesh Army follows a set of leadership traits. During this study, it was found that the existing leadership traits of Bangladesh Army have been selected focusing on both the peace and conventional conflict scenario. Most of the traits are useful and significantly important in the Bangladesh context though the set of traits are not conclusive. Considering the past conflict analysis, inputs from survey and opinion from experts- modifications on present traits are suggested. Again, traits like bearing and dependability may be excluded as those are becoming invalid in the present-day context. The new traits like emotional intelligence, creativity, and professionalism have also been suggested to include to meet the challenges of future AW.

For Bangladesh Army future warfare will be challenging due to the scarcity of resources. The past conflicts demonstrated that during the asymmetric environment the leader’s innovative ideas and creative mind-set often turned the war in favor of the inferior forces. Therefore, to practice suitable leadership traits in AW and to build capacity of the leaders, Bangladesh Army may reframe the existing leadership traits.

Recommendations

Considering the above study and discussion, the paper recommends following measures:

- a. During future AW, display of leadership traits by the leaders will be important for the decisive outcome of the battle. Thus, proposed leadership traits–‘Emotional Intelligence’, ‘Creativity and Innovation’, and ‘Professionalism’ may be included in the leadership traits of Bangladesh Army. For effective induction, these traits may be included in appropriate level of training and doctrine.

- b. Few of the leadership traits like ‘Bearing’ and ‘Dependability’ may not have much relevance for the development of future leadership, therefore may be excluded from the existing list.
- c. Most of the existing leadership traits are orthodox, deep-rooted, and well-practiced. Yet the explanation of traits like ‘Decisiveness’, ‘Judgment’, ‘Justice’, ‘Knowledge’, ‘Tact’ and ‘Unselfishness’ need to be reframed.

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Lieutenant Colonel Imtiaz Mahmud, BSP, afwc, psc was commissioned in the Corps of Infantry on November 26, 2000. He commanded an Infantry Battalion both at Chattogram Hill Tracts (CHT) and Plains. He was awarded with Bishistho Seba Podok (BSP) for showing outstanding bravery in conducting a successful operation against Armed Groups at CHT. He served as a Directing Staff at School of Infantry and Tactics (SI&T). He also served at Bangladesh Military Academy as a Platoon Commander. As a staff, he served as General Staff Officer Grade-2 (Operations) and General Staff Officer Grade-1 (Operations) at Headquarters 11 Infantry Division. He has served under the blue helmet twice. He is a graduate of Defense Services Command and Staff College, and National Defence College, Mirpur. Besides military courses at home, he attended Mid-Career Course (MCC) at Pakistan and UN Military Observer Course (UNMOC) at China. Presently, he is serving as Senior Staff Officer (Operations) at Headquarters, Logistics Area.

IMPENDING GLOBAL ECONOMIC RECESSION: CHALLENGES AND WAYS FORWARD FOR BANGLADESH

Major Mohammad Manzur Hasan, psc

“Global growth is slowing sharply, with further slowing likely as more countries fall into recession.”

- David Malpass, President of World Bank

Abstract

Conflicts among the superpowers are on the rise despite of the development of human civilization. Economic recession is one of the eloquent corollaries of the conflicts. World economy has grieved a lot due to four major recessions in the 20th century and one recession in the 21st century. COVID-19 pandemic and Russia-Ukraine crisis have put the globe on the brink of another global economic recession. Global Gross Domestic Product has been lowered, inflation is on the rise and food and energy security are at stake due to COVID-19 pandemic and Russia-Ukraine crisis. Bangladesh is likely to encounter some economic challenges due to ongoing global crisis. There may be abatement in foreign earnings and depletion in foreign remittance if global economic crisis continues. Global inflation is about to sway the domestic market of Bangladesh. As the globe is suffering from energy crisis due to tensions among the superpowers, there may be energy crisis in Bangladesh. Lacuna in supply chain will also pose convulsion in the economy of Bangladesh. Bangladesh should manage the economic crisis sprucely and deftly with a view to reaching the goal of ‘Developed Country’ by 2041. An endeavor has been taken in this paper to accentuate the present context of impending global economic recession with a view to pinpointing the economic challenges of Bangladesh to recommend some plausible measures for overcoming the impending economic crisis.

Keywords: Economic recession, world economy, COVID-19 pandemic, Russia-Ukraine crisis, global inflation, food and energy security, foreign remittance, supply chain.

Introduction

Global dynamics has been metamorphosed throughout the ages. The battle which had begun right from the incipency of human civilization to cinch the survival (personal safety, food/logistics and dominance), is still on. Attitude of subjugating inferior (in terms of size and military) countries has played an eloquent role in changing global dynamics. The tenor of transforming global dynamics through dominance has not only pulverized many civilizations/kingdoms in the past but also allowed to persist conflicts in many countries in present days. Economic recession is one of the revelatory outcomes of the imperium among the superpowers for which millions had to sacrifice their lives. From the 18th century till today the world has witnessed several eccentric economic recessions. Two years long COVID-19 pandemic and recent Russia-Ukraine crisis have once again emplaced the globe on the cusp of an economic recession.

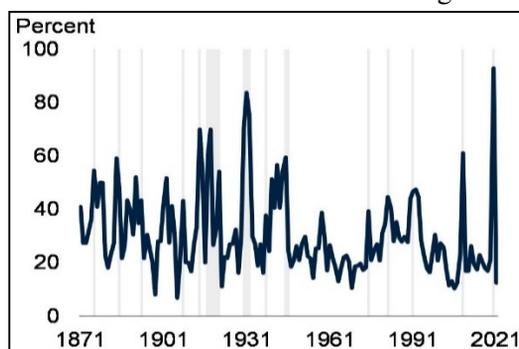
Even after modernization and technological advancement in the 21st century the globe has perceived shutting down inter-state communication and trade due to COVID-19 pandemic. International trade has been severely trammelled for the global pandemic. Russian invasion on Ukraine has propelled the globe into a new economic recession where the globe is yet to overcome the shackles of COVID-19 pandemic. Sanctions from the United States of America and her allies have mutated global economy. All these situations around the globe are signalling for an economic recession in 2023¹. Bangladesh is on the brim of facing multi-dimensional economic challenges due to pandemic situation and ongoing Russia-Ukraine crisis. Enfeeblement in foreign remittance and export earnings, continued inflation and lack of foreign direct investment are the pivotal economic challenges of Bangladesh in near future. Bangladesh should address these economic challenges prudently with a view to confronting impending global economic recession.

In this paper an endeavor has been made to discuss imminent global economic recession in Bangladesh perspective. Firstly, global economic recession throughout the ages and present context of impending global economic recession have been accentuated. Later on, economic challenges of Bangladesh have been unfolded. Finally, some measures have been suggested to tackle impending global economic recession.

Global Economic Recession throughout the Ages

Economic recession appertains a particular situation when a nation's economy encounters negative Gross Domestic Product (GDP), increased rate of unemployment, lessened retail sales and compacting measures of income and excogitating for a protracted period of time². A graph is given below which shows gradual decline of global Gross Domestic Product (GDP) during economic recession in different time zone³.

Graph 1: Decline of Gross Domestic Product during Economic Recession



Source: World Bank Blogs

¹ World Bank, The. (2022, September 15). Risk of Global Recession in 2023 Rises Amid Simultaneous Rate Hikes. Retrieved from: <https://www.worldbank.org/en/news/press-release/2022/09/15/risk-of-global-recession-in-2023-rises-amid-simultaneous-rate-hikes>.

² Adviser, Forbes. (2022, July 12). What is a Recession. Retrieved from Forbes Advisor: <https://www.forbes.com/advisor/investing/what-is-a-recession/>.

³ Bank Blogs, World. (2020, June 15). Understanding the Depth of the 2020 Global Recession in 5 Charts. Retrieved from World Bank Blogs: <https://blogs.worldbank.org/opendata/understanding-depth-2020-global-recession-5-charts>.

Great Economic Depression of 1930. The Great Economic Depression started on 29 October 1929 and lasted till 1939. It is the longest, deepest and most widespread economic depression in the 20th century. Global Gross Domestic Product (GDP) dropped by almost 15% between 1929 to 1932. Table-1 shows various economic indicators of developed countries during Great Economic Depression:

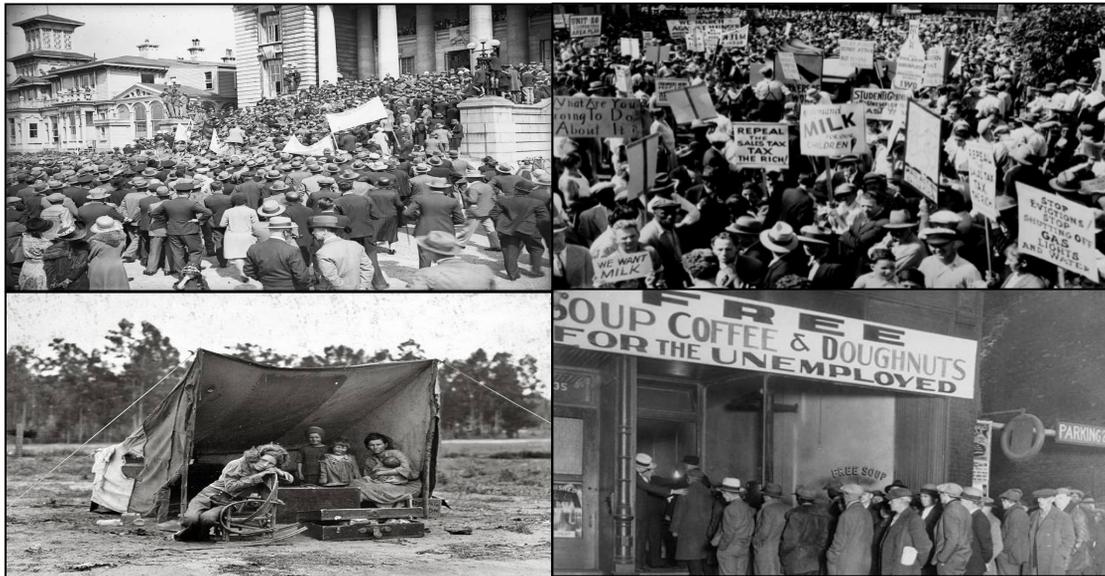
Table-1: Economic Indicators in Developed Countries during Great Economic Depression

Factors	United States of America	France	Germany	United Kingdom
Industrial Production	-46%	-24%	-41%	-23%
Wholesale Price	-32%	-34%	-29%	-33%
Foreign Trade	-70%	-54%	-61%	-60%
Unemployment	+607%	+214%	+232%	+129%

Source: Author's Construct (Data Collected from Internet, Retrieved on 23 October 2022)

Calamitous repercussions had been observed in both developed and third-world countries where decrease in personal income, prices, tax revenues and profits were common. Some glimpses around the globe of the Great Economic Depression are given below:

Photo 1: Few Glimpses of Great Economic Depression Worldwide



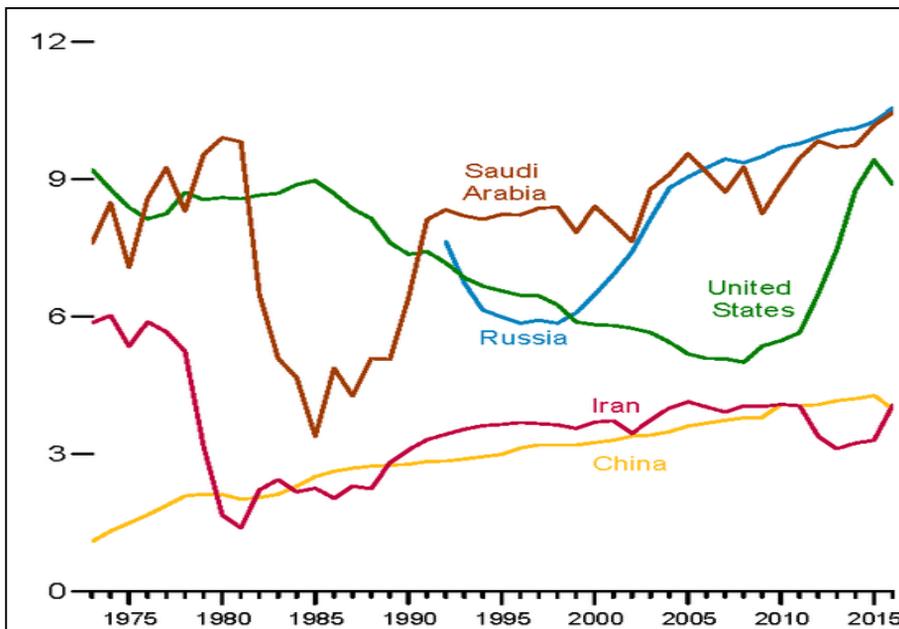
Source: Author's Collection from Internet, Retrieved on 23 October 2022

Economic Recession of 1975 and 1982. Since World War-II, global economy has witnessed four economic recessions in 1975, 1982, 1991 and 2009⁴. The recession of 1975 has been initiated due to proscription in Arab oil in October 1973. Huge rise in the price of oil effectuated

⁴ Ayhan Kose, M., Sugawara Naotaka & E. Terrones, Marco (March 2020). Global Recessions: World Bank Group.

monumental escalation in inflation which had etiolated the economy of many developed countries. 1982's global recession was sparked by few factors: oil crisis of 1979 due to reduction of oil production by Iran, stiff monetary policy of the United States of America and debt crisis of Latin America. Unemployment rate touched 10.8% at the end of 1982 which was higher than the rate of unemployment during World War-II. The Figure-1 below shows the drastic drop in Iran's oil production which ultimately steered the economic recession in 1982.

Figure-1: Top Oil Producing Countries Showing Drop in Iran's Oil Production in 1982

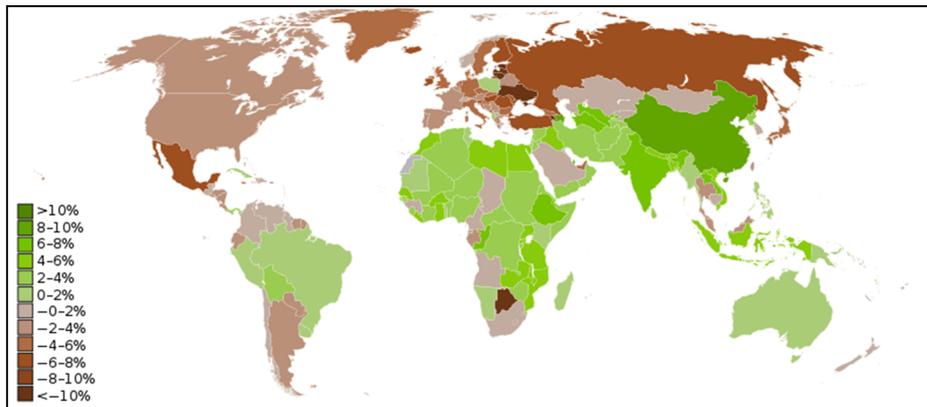


Source: Author's Collection from Internet, Retrieved on 23 October 2022

Economic Recession of 1991. The Gulf War of 1990-1991 and termination of Cold War acted as major stimulant of the global economic recession in 1991. Due to ineffectual management of economic recession, George W. Bush had to lose the presidential election in 1992 and Brian Mulroney (Prime Minister of Canada) had to resign. Advanced economies in Europe such as the United Kingdom and France had also suffered high inflation and unemployment. India also encountered economic recession in 1991 where deficit balance of payment was the main actor.

Economic Recession of 2009. The economic recession of 2009 lasted from December 2007 to June 2009. According to International Monetary Fund, the economic recession of 2009 was the most austere economic clutch the globe has ever experienced since the Great Economic Depression of 1930. The impact of the recession was experienced deplorably in most of the developed countries. On the contrary, the recession could not stymie the growth of recently fast-growing economies like China, Indonesia and India. World map with Gross Domestic Product's growth in 2009 has been exhibited in Figure-2 where countries in brown colour suffered recession and countries coloured in green remained sinewy during economic recession:

Figure-2: World Map Showing Rate of Gross Domestic Product During Recession of 2009

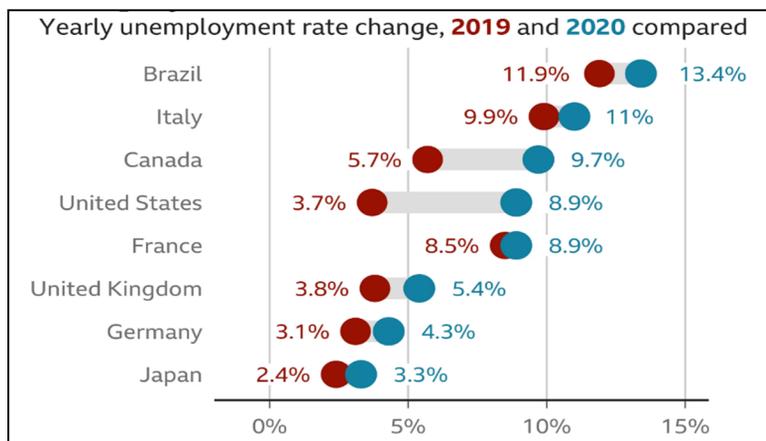


Source: Author's Collection from Internet, Accessed on 23 October 2022

Present Context of Impending Global Economic Recession

COVID-19 Pandemic. COVID-19 pandemic has dragged to postpone inter-state trade and commerce, air transportation, road and sea communication. The pandemic assisted to occur: ongoing global energy and food crisis, stock market crash in 2020, global supply chain crisis, high inflation rate and worldwide retrenchment of millions of people⁵. According to International Labour Organization, 30 million people lost their job globally in the 1st quarter of 2020. Rise of unemployment rate in world's major economies in 2019-2020 due to COVID-19 pandemic is shown in Figure-3 where almost all the developed countries had suffered escalated unemployment rate⁶:

Figure-3: Rise of Unemployment in World's Major Economies in 2020-2021



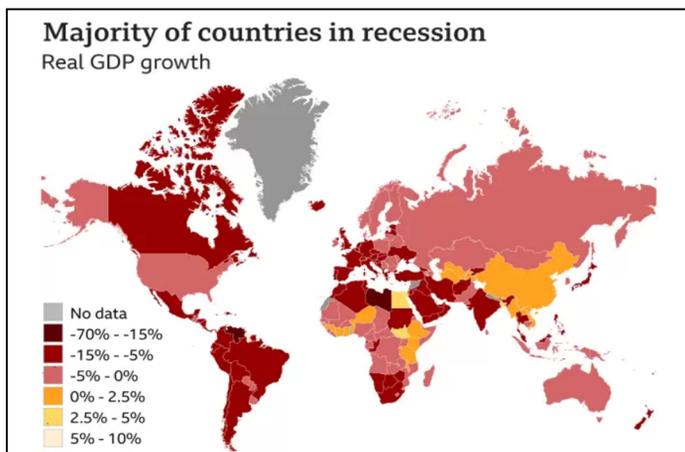
Source: BBC

⁵ World Bank, The. (2022). The Economic Impacts of the COVID-19 Crisis. Retrieved from The World Bank: <https://www.worldbank.org/en/publication/wdr2022/brief/chapter-1-introduction-the-economic-impacts-of-the-covid-19-crisis>.

⁶ BBC. (2021, January 24). Coronavirus: How the Pandemic has Changed the World Economy. Retrieved from BBC Website: <https://www.bbc.com/news/business-51706225>.

As per International Monetary Fund, global economy contracted by 4.4% in 2020. Gross Domestic Product’s growth in majority of the countries around the globe has been much lower than the expected one⁷. Gross Domestic Product’s growth during this recession in majority of the countries in the world is stated in Figure-4:

Figure-4: Majority of the Countries Suffering Recession due to COVID-19



Source: International Monetary Fund

Russia-Ukraine Crisis. By beginning a full-scale invasion in Ukraine on 24 February 2022, Russia has further atrophied global economic crisis. Global Gross Domestic Product’s growth has been decreased by 1.5% in 2022. Expected Gross Domestic Product’s growth and growth achieved during the period of Russia-Ukraine crisis are shown in Table-2:

Table-2: Expected Gross Domestic Product’s Growth and Growth Achieved in 2022

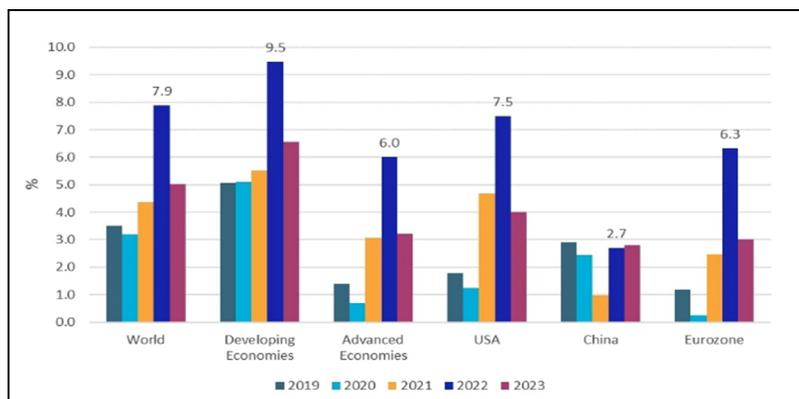
Serial	Name	Expected Growth in 2022	Growth Achieved in 2022	Growth Could Not Achieve in 2022
1.	World	4.5%	3%	-1.5%
2.	United States of America	3.8%	2.5%	-1.3%
3.	China	5.1%	4.4%	-0.7%
4.	United Kingdom	4.7%	3.6%	-1.1%
5.	Canada	3.9%	3.8%	-0.1%
6.	Germany	4%	1.9%	-2.1%
7.	Japan	3.4%	1.7%	-1.7%
8.	India	8.1%	6.9%	1.2%
9.	France	4.2%	2.4%	-1.8%

Source: Organization for Economic Cooperation and Development

⁷ School of Public Policy, Carsey. (2021, October 22). COVID-19 Economic Crisis: By State. Retrieved from Carsey School of Public Policy Website: <https://carsey.unh.edu/publication/COVID-19-Economic-Impact-By-State>.

Russia has been badly swayed due to perpetual economic sanctions from the West. Being the largest exporter of natural gas, fertiliser and food grains and among the largest suppliers of crude oil, Russia could not export above mentioned items as per planning. Countries leaned archly on Russia are suffering from food and energy crisis. 40% of Europe’s gas and oil come from Russia. Global price of crude oil increased to 120\$ per barrel at one time⁸. Being the world’s largest wheat exporter, Russia could not export wheat because of the economic sanction of the West. As wheat is widely popular around the world, the price of wheat has skyrocketed up to 51%. Global inflation rate from 2019-2023 is shown in Figure-5:

Figure-5: Global Inflation Rate from 2019-2023



Source: Euro Monitor⁹

Economic Challenges of Bangladesh

Abatement in Export Earnings. Due to global price hike, Bangladesh is coerced to purchase major raw materials from abroad at an escalated rate. Notable imported items of Bangladesh with its escalated cost are shown in Table-3:

Table-3: Notable Imported Items of Bangladesh

Serial	Item	Cost	Global Inflation (October 2022)
1.	Refined Petroleum	2.64 billion \$	11%
2.	Raw Cotton	1.8 billion \$	40%
3.	Wheat	1.28 billion \$	18%
4.	Light Rubberized Knitted Fabric	1.09 billion \$	13.5%
5.	Heavy Pure Woven Cotton	975 million \$	17.2%

Source: The Observatory of Economic Complexity¹⁰

⁸ Damien Guenette, Justin., Ayhan Kose, M. & Sugawara, Naotaka. (September, 2022). Is a Global Recession Imminent: World Bank Group, 25-26.

⁹ Monitor, Euro. (2022, June 17). Energy Dependent Countries under Pressure. Retrieved from Euro Monitor: <https://www.euromonitor.com/article/global-inflation-tracker-q2-2022-energy-dependent-countries-under-pressure>.

¹⁰ Observatory of Economic Complexity, The. (2022, October 31). Bangladesh. Retrieved from The Observatory of Economic Complexity: Bangladesh (BGD) Exports, Imports, and Trade Partners | OEC - The Observatory of Economic Complexity.

Procuring raw materials at an increased rate will result into higher price of the finished goods. If European and American buyers get finished products at lower price, then they will turn away from Bangladesh. COVID-19 pandemic and ongoing Russia-Ukraine crisis have lessened the demand of garments products in Europe and the United States of America. People are more prone to fulfill their basic needs instead of their luxury product ahead of economic recession. Thus, the impending global recession may decrease the export earnings of Bangladesh.

Depletion in Foreign Remittance. Foreign remittance has been a major source of income in annual budget of Bangladesh. The expatriates residing in different parts of the globe send huge amount of money regularly which works as catalyzer in the economy¹¹. Table-4 shows the state of expatriates went abroad in 2021 and 2022 (as on 30 September 2022).

Table-4: State of Expatriates Went Abroad from Bangladesh in 2021-2022

Serial	Name of Country	Total Expatriates in 2021	Total Expatriates in 2022
1.	Saudi Arabia	4,57,227	5,13,653
2.	United Arab Emirates (Dubai)	29,202	83,674
3.	Kuwait	1,848	13,599
4.	Oman	55,009	1,35,481
5.	Qatar	11,158	17,204
6.	Jordan	13,316	11,218
7.	Malaysia	28	5,362
8.	Singapore	27,875	48,225
9.	South Korea	108	3,459

Source: Author's Construct (Data Collected from Internet, Retrieved on 23 October 2022)

Bangladeshi expatriates have bagged \$22, 070.87 million in 2021 and \$16,465.35 million in 2022 (till 30 September 2022) from 20 countries. Millions of workers around the globe lost their job due to non-functioning of their industries/sectors since the initiation of COVID-19. If global economic recession occurs, a good number of expatriates are likely to lose their jobs. Again, expatriates residing in different countries have started using unauthorized means to dispatch money back to home. Besides, large number of Bangladeshi expatriates have started preserving foreign currency as they expect more exchange rate (\$ to taka; taka 120-140 per \$)¹². These situations are posing threat for the depletion of foreign remittance of the country.

¹¹ Tribune, Dhaka. (2022, October 18). With Global Recession Looming, Bangladesh will Face hard Times. Retrieved from Dhaka Tribune: <https://www.dhakatribune.com/business/2022/10/18/with-global-recession-looming-bangladesh-will-face-hard-times>.

¹² Kumar Nath, Ranjit, Head of Economics Department, Notre Dame College Dhaka, interviewed by the Author on 31 October 2022.

Perpetual Inflation. As the globe is encountering serious inflation, Bangladesh is no longer exception to this crisis. High inflation rate is guiding the globe to yet another global recession in 2023¹³. The global energy market has become wobbly because of Russia-Ukraine crisis. If the price of fuel escalates, then price of daily necessities also increases. Maximum domestic industries of Bangladesh immensely rely on imported raw materials. If Bangladesh needs to purchase raw materials at a higher price, then the price of the finished goods will automatically be costly. Too much inflation within the country may effectuate the life of mass people strenuous. The rate of inflation in Bangladesh in last 7 years is in Table-5.

Table 5: Inflation Percentage; Bangladesh and Global Perspective

Serial	Year	Inflation Rate (%) Bangladesh	World Inflation (%)
1.	2015	6.19%	1.43%
2.	2016	5.51%	1.55%
3.	2017	5.70%	2.19%
4.	2018	5.54%	2.44%
5.	2019	5.59%	2.19%
6.	2020	5.69%	1.92%
7.	2021	9.10%	3.42%

Source: World Data Info Website

Energy Crisis. Everything in the globe swivels around the energy. Recent embargo on Russia has hectored almost entire Europe to encounter energy crisis¹⁴. Embargo by the United States of America block and counter-embargo by Russia have pushed the price of fuel to \$120 per barrel at one time. Even many developed countries are suffering from electricity crisis due to lacuna of fuel/ gas for its production. Bangladesh largely relies on imported fuel for the production of electricity. Garments and others industries substantially reckon on electricity; if the supply of electricity is intruded then the output/ finished product will be much less than the actual demand of both domestic and international market. If the price of fuel in international market does not become stalwart, then Bangladesh may encounter gigantic manacle in producing required electricity.

Foreign Direct Investment. Many advanced countries such as, the United States of America, the United Kingdom, Germany, France and Australia are battling to stabilize their own economies. The globe is suffering from more than 4% inflation which may trigger a global recession in 2023¹⁵. Most of the countries have started rebuilding and recovering their economies instead of investing in another country. Bangladesh has been a suitable business friendly country for foreign direct investment since long. As the globe is on the edge of yet another economic recession in 2023,

¹³ Reuters. (2022, September 15). World Bank Sees Rising Risk of Global Recession in 2023. Retrieved from Reuters: <https://www.reuters.com/markets/rates-bonds/world-bank-sees-rising-risk-global-recession-2023-2022-09-15/>.

¹⁴ Aljazeera. (2022, September 29). Is a global recession coming? More experts are raising the alarm. Retrieved from Aljazeera: <https://www.aljazeera.com/economy/2022/9/29/is-a-global-recession-coming-more-experts-are-raising-the-alarm>.

¹⁵ BBC. (2022, September 16). World Bank: Global Rate Hikes could Trigger 2023 Recession. Retrieved from BBC: <https://www.bbc.com/news/business-62922860>.

Bangladesh may defy intricacy in acquiring new foreign direct investment and re-investment by the counties already operating within the country.

Dearth in Supply Chain. Production and distribution of goods and services around the globe have been frequently muddled for last three years¹⁶. Accordingly, dearth of supply has been observed feckly in all economic sectors. Russia-Ukraine crisis has further exacerbated the supply chain. Hence, the cost of raw materials and other major consumer and industrial items have been mushroomed globally. Bangladesh largely reckons on the imported raw materials for the production of ready-made garments product, electricity and other essential commodities. As the global supply chain encounters repeated disruption, Bangladesh is prone to brazen scantiness in supply chain during upcoming global economic recession. As the global price of fuel has been skyrocketed, production cost of various daily essentials within the country may increase. Price hike may dismay the farmers/exporters/ industrialists and thus supply chain of Bangladesh may experience manacle in coming days.

Ways Forward to Overcome Economic Challenges of Bangladesh

Ensuring Food Security. It is of great importance to ensure food security during any global economic recession. Scantiness in supply and high price put daily necessities beyond the reach of mass people. If adequate food supply is not guaranteed, famine might betide. The government of Bangladesh should italicize producing all essential good grains by cultivating the fallow land. Concurrently, the government should dispirit importing of any food grains which can be grown here. Price of all daily essentials needs to squelched within the easy reach of common people by operating Mobile Court and monitoring the market¹⁷. Bangladesh should always conserve a stock of 5-6 months' essential food grains (rice, wheat, edible oil, lentils and sugar) to encounter any eventualities.

Exporting Skilled Labour. Bangladesh should rivet on exporting as many as skilled labour as possible. The government should conduct diplomatic campaign in the Middle East and Europe to export skilled labour. Exporting skilled labour will not only riddle out the unemployment problem of the country but also ensure flow of huge remittance in Bangladesh. There is no volition to make the labourers virtuoso through adequate institutional training with a view to snagging international labour market. Institution based vocational training within the country should focus at fulfilling the requirements of the countries where the workers will be sent. Proper planning, preparation and adequate training will cinch exporting of skilled labour abroad. Huge amount of remittance will be necessitated to deal with any future economic recession which will be garnered by the expatriates.

¹⁶ Financial Express, The. (2022, June 02). Current Economic Challenges of Bangladesh. Retrieved from The Financial Express: <https://thefinancialexpress.com.bd/views/current-economic-challenges-of-bangladesh-1654183200>.

¹⁷ Ahmed, Professor Dr. Imtiaz, Faculty Member of Department of International Relations, Dhaka University, Dhaka, interviewed by the Author, on 31 October 2022.

Strict Monitoring of Import. Import cost of different items is on the rise due to COVID-19 pandemic and Russian invasion in Ukraine. Bangladesh has to spend huge amount of \$ due to increased import costs. The government should scrupulously monitor the import especially the goods/products invoiced and actual receipt of goods/products. At the same time, Bangladesh Bank and relevant agencies should also check the actual international price of the goods/items imported from abroad. Import of all types of luxury goods should be proscribed especially precious jewellery, car/jeep of more than 2000cc, expensive home appliances, cosmetics, mobile phone etcetera. However, the import of essential items such as lifesaving drugs, fuel, baby food and raw materials for the production of export items should be prioritized during import.

Reliance on Domestic Industry. As Bangladesh largely relies on imported goods, raw materials and products, she expends a lot of money (in \$) in this sector. Bangladesh spent \$5,222 crore in financial year 2020-2021 and \$7,343 crore in financial year 2021-2022 as import cost. The government of Bangladesh should increase reliance on domestic industry with a view to reducing import cost¹⁸. Reliance on domestic industry will not only escalate employment but also skimp huge import cost. At the same time, it will also create the scope to export goods/ materials abroad. The government should allocate adequate financial incentives with a view to rejuvenating the domestic industry. Concurrently, relevant government agencies should discourage importing products/goods which can be produced here.

Controlling of Inflation. Global inflation in 2022 is 8.8%. The wave of inflation has already started to be felt in the country. Huge portion of domestic inflation is caused by global inflation. Relevant government agencies should strictly monitor the open and wholesale market of daily essentials. Regular raid should be conducted at the mills/factories producing rice, sugar, edible oil, lentils and flour with a view to not letting any sort of hoarding at any level. Flow of supply of daily necessities should be iced to keep the inflation within a tolerable limit. The clout of middlemen should be truncated. Farmers involved in cultivation should be provided with enough incentives with a view to inspiring them to produce more food grains.

Raising Social Awareness. Entire globe is going through a turbulent time. The world is on the threshold of an economic recession in 2023 due to post COVID-19 situation and Russia-Ukraine crisis. Gross Domestic Product's growth of the world has been lowered, inflation is on the rise and price of fuel is wonky. People within the country need to be made aware about the global happenings. The consequences of economic recession (unemployment, inflation, energy crisis and depletion in remittance) should be discussed elaborately by organizing workshop, seminar, symposium and talk show. Both print, electronic and social media should be harnessed for raising consciousness to cultivate the fallow land, be frugal in power consumption, eschew using luxury goods and send remittance back to home legally.

¹⁸ Jafar Emran, Sheikh, Faculty Member of Department of Economics, Dhaka University, Dhaka, interviewed by the Author, on 20 October 2022.

Conclusion

Economic recession is usually effectuated by the tensions and competitions among the superpowers. But the impact of it is experienced round the globe. An economic recession not only stymies the development but also enfeebles the economic backbone of a nation. COVID-19 pandemic and Russia-Ukraine crisis have pushed the entire world towards a new economic recession in 2023. The world has noticed four major economic recessions respectively in 1930s, 1975, 1982 and 1991. Among them, 1930s Great Depression was the most cataclysmal in which almost all the countries of the world suffered severely. The price of oil skyrocketed due to embargo in Arab oil in 1973 which had resulted into an economic recession in 1975. The world had encountered another economic recession in 1982 due to Islamic Revolution at Iran in 1979 and strict monetary policy of the United States of America where 16.2 million people around the world became unemployed. Gulf War of 1991 had been amenable for the economic recession in 1991 for which George W. Bush had to lose the presidential election in 1992.

COVID-19 after its first detection on 31 December 2019 has menaced to postpone the interstate trade and commerce, air transportation, road and sea communication. Due to COVID-19 pandemic 30 million people around the world lost their job only in the 1st quarter of 2020. Global energy and food crisis, high inflation and disruption in global supply chain are the significant precipitates of the pandemic. Before recuperating the wounds of COVID-19 pandemic, Russia invaded Ukraine and thus global economy exacerbated. Almost entire Europe is suffering badly due to energy crisis. Due to global energy and fuel crisis Bangladesh is facing hurdles in energy sector. As global supply chain is disturbed, Bangladesh may encounter dearth of raw materials. Foreign direct investment may fall down if global economic recession continues for long.

Planned and coordinated efforts are required with a view to tackling the impending global economic recession. Food security should be prioritized in case of any global economic recession. Cultivating the fallow land and conservation of food stock of 5-6 months will definitely ice the food security. Export of skilled labour will not only assist the economy to earn more remittance but also solve unemployment problem. Items/goods/products imported should be strictly monitored by all concerned agencies of the government. Luxury goods should be proscribed until the recession is over. Reliance on domestic industry will decrease import cost as well as solve the unemployment problem. The price of daily commodities needs to be kept within the reach of mass people. Social awareness about the impending global economic recession should be raised by proper planning. All these measures will abet the country to tackle any impending global economic recession.

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ENHANCEMENT OF INTEGRATING VIRTUAL REALITY (VR) SIMULATION TRAINING FACILITIES IN BANGLADESH ARMY

Colonel Md Kamal Uddin Komol, psc

Abstract

The tools and tactics of fighting a war have always evolved along with technological development. The effective use of Virtual Reality (VR) technology in different fields of military training and applications has brought warfare into a new dimension. In most developed countries, VR Simulators in military training have already been proved to be phenomenal in realistic and cost-effective training. Bangladesh Army lacks in taking a comprehensive plan for implementing VR Simulation Training Facilities to enhance overall efficiency. To explore the potentials of VR technology, Bangladesh Army can adopt a mixed approach in phases for speedy implementation in connection with Government's Vision- 2041. Information Technology (IT) Directorate and Signal Directorate may identify the priority fields of VR simulation training in Bangladesh Army in coordination with Military Training (MT) Directorate. Headquarters, Army Training and Doctrine Command (HQ ARTDOC) may carry out Research and Development (R&D) for the integration of VR technology and analysis of training modalities for VR simulators. IT Directorate may coordinate integration and collaboration with private, government and foreign agencies. Once suitable VR simulators are confirmed, HQ ARTDOC needs to finalize the training modalities. Concurrently, existing non-VR simulators can be upgraded with VR capabilities by collaborating with private farms for effective training. Further study by Army Headquarters on the implementation of selected VR training facilities with Artificial Intelligence (AI) along with proper allocation of the budget and formulation of training modalities will be of utmost importance.

Keywords: Technological development, Virtual Reality, simulation training, training modalities, Research and Development (R&D).

Introduction

The ‘history of humanity’ and the ‘evolution of technology’ are analogous to each other. With time, the relationship of humans with technology is getting a new natural intuitive interface. There is a trend of making digital relationships where Virtual Reality (VR) technology has unlocked new unbound opportunities. VR is constantly evolving and pushing the boundaries of what we understand about the world around us and it always has. Although it has advanced significantly over the past 50 years, it is still regarded as a new technology. The developments of Industries have largely been attributed to the digital behemoths Amazon, Apple, Facebook, Google, Microsoft, Sony, and Samsung which have established VR and Augmented Reality (AR) divisions over the past ten years.

War is an outcome of its time. Battle tactics and the weaponry we employ have always evolved along with technology that has changed the character of warfare. The nature of military

training changes as a result of innovation, advancements, and renewals in instructional strategies and training methodologies. VR Simulation training facilities have given this tendency a new dimension as a result of the development of today's global computer network technology. Most developed countries have already included VR to train their troops and other advanced countries are also using VR simulators to train their armies. Besides, different armies around the globe are harnessing VR simulation training facilities to meet their evolving needs for training and steer for excellence.

VR simulation training facility provides military training with the leverage to transform the emphasis from 'Right Time Right Place' training to 'Anytime Anywhere' training. It has immense potential for enhancing access to training and reducing capability constraints, which are crucial for training providers. In the current context of the Bangladesh Army, a training environment for VR simulation training with current inhabited training would be the most reasonable solution. Transformation in the military training environment is also a requirement to keep pace with the digitalized era. Thus, the enhancement of integrating VR simulation training facilities in the Bangladesh Army is a need of time.

In this paper an attempt has been made to discuss the concept of VR simulation training first, followed by the use of this technology in different fields of military training and application. Thereafter, the present VR simulation training facilities in military forces of developed countries have been briefly discussed. Subsequently, the existing and probable fields for integrating VR in the training facilities of the Bangladesh Army have been highlighted. At last, this paper covers the ways forward to integrating VR simulation training in Bangladesh Army. The aspects of the budgetary part including suitable Research and Development (R&D) organization for the Bangladesh Army has been kept out of purview in this paper.

Related Definitions and Concept of VR Simulation Training

Related Definitions

Virtual Reality. Webster's New Universal Cambridge Dictionary [1989] defines virtual as 'being in essence or effect, but not in fact' and reality as 'the state or quality of being real'. The website Merriam-webster.com has more recently defined full-term virtual reality to be "an artificial environment which is experienced through sensory stimuli (as sights and sounds) provided by a computer and in which one's actions partially determine what happens in the environment." (Webster, 2015). As stated by Curcio et al. (2016), through the development of immersive sensations, such as sight, sound, touch, and occasionally smell, VR simulates a world. Brey (1999) described, "Virtual reality systems are defined as being employed head-mounted displays (HMDs), data gloves and data suits to simulate an immersive, interactive computer-generated environment."

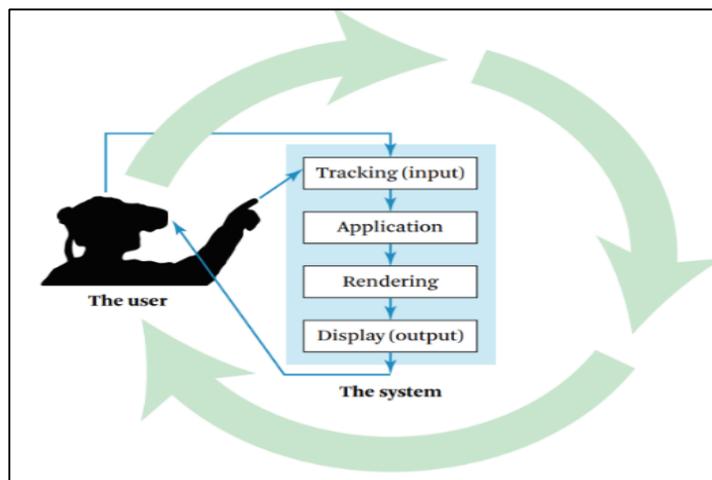
In this paper, VR is defined as virtually generated digital environment by a computer which can be experienced and felt as that of the actual environment. A realistic experience of a virtual

environment that permits users to feel like they are present within this reality and that they can engage with this virtual world and effect it (Informatech,2021).

Augmented Reality (AR). AR is an interactive experience of the real world environment in which objects residing in the real world are enhanced using the perceptual information generated by the computer (Mahima, 2020). Cambridge Dictionary defines AR as the images that are computer generated and used together with a view of the real world.

Reality Systems. A reality system combines hardware and operating system that enables full sensory experiences. Communication is attained through various hardware devices between the human and the system. These devices serve as input and output. A change from human output to digital input or from digital output to human input is referred to as a transfer function in the context of action. The term 'input' refers to data entering the system from the user, and 'output' refers to data leaving the system and returning to the user. As long as the VR experience lasts, this creates an ongoing loop of input and output (Jerald, 2009).

Figure 1: VR System Cycle



Source: Jerald, 2009.

Concept of VR Simulation Training

VR simulation training has to be realistic in nature to stimulate the trainee's brain entirely and convert them into the experience (Capsiam, 2021). VR technologies change users' perceptions by replacing or blending with the output of a computer program (Biao Xie, 2021).

VR System. In VR system, the computer controls number of dissimilar sensory display devices to engulf the user in a 3D environment (HITL, 2021). The system must be able to track the location and orientation of the user's head to determine the right viewpoint. Any other bodily parts that will be used actively in the virtual environment such as hands, feet, or prehensile tails, must also be tracked.

VR Experiences through Different Sensors. The user's grade of sensory awareness is used to discriminate between numbers of VR experience components. As the auditory, haptic, kinesthetic, and factory senses may be artificially mimicked, VR is not just restricted to visual information. Currently, conventional VR systems provide lifelike visuals, sounds, and other sensations like touch, smell, balance (vestibular sense), and taste that imitate a user's physical presence in a virtual environment using either VR headsets or multi-projected environments and other types of sensors (LaValle, 2020).

Figure 2: Taste bar (Top left), VR smelling device (Top right), Touch sensor (Bottom left), Ear Electroencephalography (EEG) sensor (Bottom right)



Source: LaValle, 2020

Use of VR in Military Training and Military Applications

How is VR Used in Military Training?

The effectiveness of any nation's military depends much on technology. The adoption of modern technology promises to create a military force that is qualitatively superior and capable of combating both conventional and unconventional threats. The use of VR in military training offers a tremendous promise because it enables the members to get realistic training.

Situational Awareness. VR allows military troops to train in high-pressure, risky and diverse circumstances in a risk-free situation. It helps commanders at all level to develop their decision-making process in response to various situations.

Activity-Based Training. VR training is ideal for practicing potentially life-threatening acts like parachute jumps since it uses haptic technology. Inexperienced military soldiers can get the exposure of working under tight situations like submarines or tanks.

Unit Training. To operate effectively, military forces must be able to rely on each other. Teams can experience working together through VR training, which may help them comprehend how their actions affect their team members and how to collaborate more effectively in the future.

Response to Technological Changes. The transition from the industrial to the digital era will present major challenges for the military sector. Military personnel can get ready for the challenges brought by technological breakthroughs like VR technologies.

Scale Up Training. The ability to roll out military training is crucial if teaching at a high level necessitates a large workforce. It offers a low-cost way to guarantee consistency in training while also giving a way to measure and evaluate individual's progress, which is even better for military people (Alex, 2022).

Military Applications of VR Training

Military is always pioneer in inventing new technology. It also developed new ways of using VR technology to train the soldiers. VR is increasingly used in advanced ground vehicle simulators where troops get realistic feel of the vehicle control and performance in diverse terrain types in varied weather condition. In military, VR-equipped bases and training facilities are also growing up rapidly such as, Cave Automatic Virtual Environment (CAVE) systems, motion trackers, and real-world gear like vests and firearms etcetera. Many of the real-life military trainings have some element of danger like parachute jumping or heavy artillery operations. VR allows troops to be put in a risk-free environment where they may safely practice combat manoeuvres (Alex, 2022). In military medical field, it is possible to operate different life-saving procedures utilizing VR technology simulating diverse battle situations.

Present VR Simulation Training Facilities in Military Forces of Developed Countries

VR Simulation Training in China Military Forces

Combat Drills on Virtual Battlefields. With the use of the state-owned China Electronics Technology Group Corporation's (CETC) Intelligent Commando VR training system, soldiers can practice combat manoeuvres on fictitious battlefields with either real teammates or created VR avatars. Trainees wear VR headsets in which battlefield simulations are presented. Interactions can be recorded allowing post-event review and critique.

VR Training with Missile Systems. Chinese soldiers are using VR to organize cheaper, more frequent training with missile systems. China's rocket force is using VR to train its soldiers to use missile systems so that exercises can be carried out more frequently and at a reduced cost. According to a People's Liberation Army (PLA) Daily report, the PLA's tactical and strategic missile force uses the technology as a virtual training ground for soldiers.

The PLA's Parachutists Practice. Paratroopers in China are turning to VR to boost their combat readiness. It is evident that the PLA is currently using the US model to maximize the potential of military paratroopers, and the move has been praised (Kirsten, 2021).

Figure 3: PLA Soldier Participating in VR Parachute Training



Source: <https://immersive-technology.com/virtualreality/pla-to-use-vr-training-program-to-enhance-combat-readiness/>.

VR Technology in UK Military Forces

VR Based Boot Camp Experience. British troops are tapping into a video game world to improve their sharp-end skills as they continue to try a simulation based on a popular first-person shooter. The new VR kit- which has the same roots as multiplayer sensation Fortnite- allows 30 soldiers at a time to immerse themselves in a digital environment. Wearing headsets, personnel are with a realm of impressive visuals plus high-definition surrounded and gesture control imitating real-life actions and scenarios. Soldiers can hold weapon during crouching and crawling their way across the battlefield during their play. (Marshall, 2020).

Figure 4: UK Military Forces in VR Based Boot Camp



Source: <https://bootcampmilitaryfitnessinstitute.com/2019/09/09/shooting-games-for-tactical-training/>

Figure 5: Simulated Environment in VR Training



Source: <https://www.infinadeck.com/blog/british-army-trialling-virtual-reality-training-technology/> and <https://insights.globalspec.com/article/11085/british-army-to-test-virtual-reality-training-for-soldiers>

Medical Training. Before the invention of VR, it was almost impossible to train military medical personnel in near to actual battle like situations. UK has developed a VR simulator which has an expandable interior environment of a Chinook helicopter. The soldier is then placed inside, equipped with a prosthetic body on the floor and a VR headset that allows him to fully immerse himself in a cramped conflict zone environment during a military evacuation scenario (Velichko, 2021).

Figure 6: Simulation of Life-Saving Operations Using VR



Source: <https://jasoren.com/using-virtual-reality-for-surgical-simulation-trainings/>

Post-Traumatic Stress Disorder (PTSD) Recovering Therapy. Numerous services are available to aid recovering troops with PTSD. Currently, there is another technique to cure PTSD besides standard psychiatric therapy. UK military forces are using their VR application for PTSD recovery therapy (Velichko, 2021).

Figure 7: PTSD Recovering Therapy through VR Application



Source: <https://www.xr.health/blog/virtual-reality-key-ptsd-recovery/>

Virtual Battlefields. Many of the types of military training that take place in real life entail some level of risk. Whether it's heavy artillery training or parachute jumping, fatal mishaps still happen occasionally. However, with the aid of VR, soldiers can be placed in a risk-free setting, allowing them to conduct combat drills safely and without any adverse consequences. They can simulate various battle situations with an Artificial Intelligence (AI) or their actual teammates while using a portable battery, a VR headset, and real-life guns (Velichko, 2021). As a consequence, the UK Army significantly cuts the training budget while still achieving successful results in advanced flight simulation, advanced ground vehicle simulation, equipment familiarization training etc.

Figure 8: Virtual Battlefields of UK Army



Source: <https://bootcampmilitaryfitnessinstitute.com/2020/04/06/fornite-vr-the-british-army/>

VR Simulation Training in US Army

Boot Camp Training in VR. The Dismounted Soldier Training System (DSTS) is the first-ever VR training system for US military infantrymen. Soldiers can be trained in any kind of environment like urban, wooden or desert depends on the requirement of the leadership. It has got head, arm and leg sensors to detect motions. Each VR set is connected to a network so that soldiers can operate as a team. Each one of the soldiers of a team can talk to each other and move around-just like they do in a real environment.

Figure 9: US Army Boot Camp Training in VR



Source: <https://www.army-technology.com/news/newsus-army-fields-first-dismounted-soldier-training-system/>

Equipment Training. A trainee's ability to use specific equipment during any operation is practiced by VR technology. With the help of the DSTS, soldiers may perform foot patrols and clear buildings in a simulated training environment. Soldiers of US Army conduct their training with the DSTS at Fort Bragg's virtual training facility which is depicted in Figure-10.

Figure 10: US Army Engineers Training Using VR



Source: <https://blog.techviz.net/4-use-cases-for-virtual-reality-in-the-military-and-defense-industry>

VR Parachute Simulator. US Military is using VR parachute trainers. American special operators can practice their air insertions repeatedly before the actual mission using a new VR trainer that simulates them before their jump. Since the system can simulate numerous jumpers at once, a unit can digitally jump together and coordinate their efforts to make the proper insertion into the assigned mission area.

Figure 11: Soldiers Participated in a VR Parachute Jump Simulator at Georgia National Guard Air Dominance Centre, Savannah



Source: <https://www.dvidshub.net/image/6355690/virtual-reality-parachute-jump-simulator>

VR Simulation Training in Russian Military Forces

Parachute Jump Simulator. At the 209th Special Parachute Training Centre in Ryazan, a VR parachute jump simulation is demonstrated in Figure-12.

Figure 12: Russian Military Demos Parachute Jump Simulator



Source: <https://www.military.com/video/russian-military-demos-parachute-jump-simulator>

VR Simulation Training in German Military Forces

German Army Stinger Simulator. An indoor device called the Virtual Stinger Dome Trainer allows air defence forces to engage in interactive training in a virtual 360-degree environment. The Training Support Activity Europe provides a course and training at the Virtual Stinger Dome Trainer at the Grafenwoehr Training Area, Germany operated by 7th Army Training Command's (MiliSource, 2018). Figure-13 exhibits the training of German Military Forces.

Figure 13: Stinger Simulator



Source: <https://defensetechconnect.com/2021/12/08/stinger-training-dome-projects-terrain-and-aircraft-images-within-360-vr-battlefield/>

Existing VR Simulation Training Facilities in Bangladesh Army

In the existing training simulation facilities of our army, VR is not widely popular yet. However, a few VR simulators are under development in different institutions and being developed mostly with the support of local farms.

Army War Game Simulation System (AWGSS). In 2015, Bangladesh Army acquired an off-the-shelf software from MASA Group of France and customized it as Army War Game Simulation System (AWGSS). This war game software was designed to allow the decision to be made by Commanders.

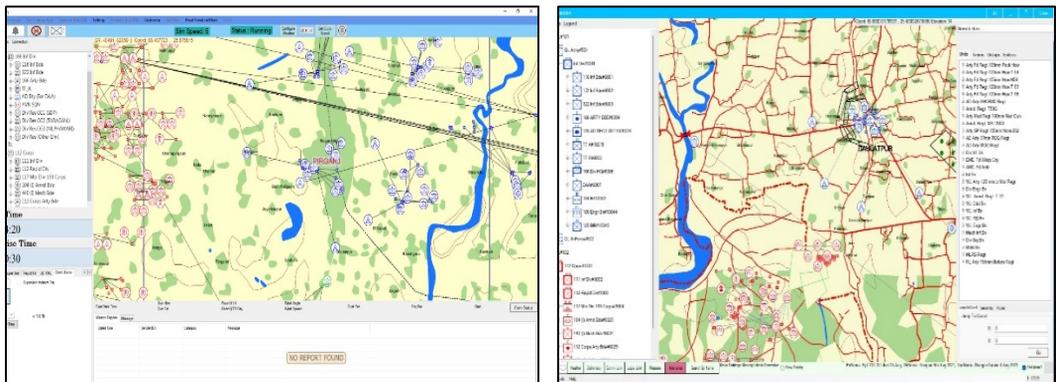
Figure 14: MASA Sword War Game Simulator



Source: <https://www.prweb.com/releases/2016/06/prweb13455186.htm>

Indigenous War Game Simulation System (IWGSS). The development of IWGSS started in June 2019 and the first trial exercise with IWGSS was conducted in March 2021. At present, IWGSS is in a workable state. VR plays a vital role in the simulation part of this system.

Figure 15: IWGSS War Game Simulator



Source: Army War Game Centre (AWGC)

VR Simulator for Tank T-59 II G (Durjoy). Simulator for Tank T-59 II G (Durjoy) is a VR based simulator. At present, the Tank's internal and external environment can be observed with the head-mounted VR display. Development is going on to incorporate driving, maneuvering and other tactical features within the artificial environment.

Figure 16: VR Simulator of Tank T-59 G (Durjoy) at Armoured Corps Centre & School (ACC&S)



Source: Author's Collection from ACC&S

AR Based Application Simulator at ACC&S. ACC&S has developed an AR-based Application simulator in collaboration with Microtech Bangladesh. This application is very useful to teach the internal functioning of different machines and components which are not normally visible from outside. It is also effective to orient the trainee with different internal parts of a tank, APC, Vehicle or machine. This application is used with a tablet, computer or smartphone (Figure-17).

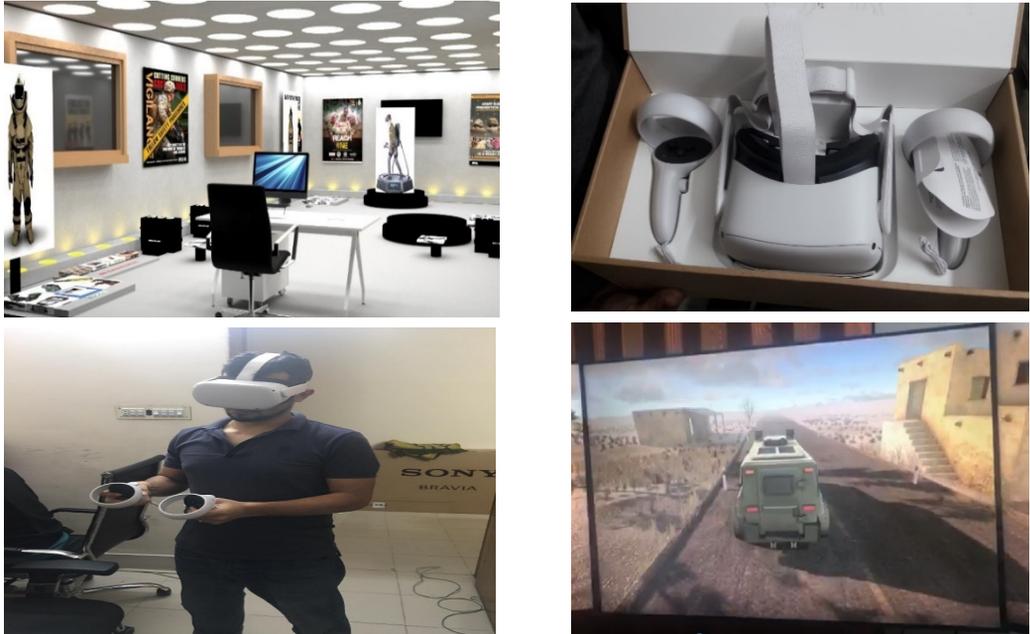
Figure 17: AR Simulation System of ACC&S



Source: Author's Collection from ACC&S

IED Detection, Identification and Neutralization VR Simulator at Ordnance Centre and School (OC&S). This is a VR based simulator, integrated with the software. After integrating an omnidirectional trade mill, the system will be ready for the training of one operator. The process of procuring the omnidirectional trade mill is on process (Figure-18).

Figure 18: VR Simulator of OC&S for IED Detection, Identification and Neutralization



Source: Author's Collection from OC&S

VR Simulator of Crime Scene Investigation at Corps of Military Police Centre and School (CMPC&S). This is an ongoing project and planned to be accomplished in two phases. Project work for 1st phase is going on with the allotted budget. Presently, 90% work of 1st phase is already completed. After completion of 1st phase, 2nd phase will start after receiving allotment of the budget.

Figure 19: VR Simulation System for Crime Scene Investigation at CMPC&S



Source: Author's Collection from CMPC&S

VR Based Traffic Control Simulator at CMPC&S. This is also an ongoing project and is to be implemented in two phases. Project work for 1st phase is going on with the allotted budget. Currently, 70% work of 1st phase is already completed. After completion of 1st phase, 2nd phase will start after receiving allotment of the budget.

Figure 20: VR Simulation System for Traffic Control of CMPC&S



Source: Author's Collection from CMPC&S

Existing Non-VR Based Simulators in Bangladesh Army

The existing non-VR based training simulators available in different training institutions and units are shown in Table-1.

Table-1: Non-VR Based Training Simulators Available in Different Training Institutions

Ser	Name of Training Institutions	Simulators Available (Non-VR)	Remarks
1.	ACC&S	a. Composite Simulator for Tank T-69IIG. b. Simulator for Tank T-59 (Galloping Horse). c. Simulator for Tank T-59 (Dynamic). d. Interactive Wireless Communication and Tactical Exercise Lab. e. BTR-80 APC (Static) Training Simulator.	
2.	ECSME	a. Small Arms Firing Simulator. b. Indoor Mining Simulator. c. Counter Improvised Explosive Device (CIED) Simulator. d. Riverine Engineering (RE) Simulator.	
3.	SI&T	a. Two Simsoft APC Driving Simulator. b. Two Simsoft APC Gunnery Simulator. c. METIS M-1 Simulator (RUSSIA). d. Parachute Manoeuvre and Landing Simulation. e. Small Arms Firing Simulator.	

Ser	Name of Training Institutions	Simulators Available (Non-VR)	Remarks
4.	AC&S	*a. Artillery Battle Field Firing Simulator. b. Air Defense (AD) Gun Firing Simulator.	*In progress
5.	STC&S	Electronic Warfare Communication Planning, Training and Simulation System	
6.	Army Aviation School	a. REDBIRD Fixed Wing Flight Simulators. b. Diamond DA 40 NG Flight Simulators.	
7.	BMA	Small Arms Firing Simulator	
8.	EMEC&S	a. Driving Simulator b. Welding Simulator c. ATGW SR Metis M-1 Simulator d. Programmable Logic Controller Training Simulator	
9.	ASCC&S	B Vehicle Driving Simulator	
10.	AMCC&S	CPR Simulator	
11.	11 SP Regt Artillery	Self-Propelled Artillery Gun Firing Simulator	

Source: Author's Construct.

Probable Fields of VR Simulation Training in Bangladesh Army

Due to rapid urbanization, every year training area for the military is shrinking in Bangladesh. However, VR simulation training can provide realistic and cost-effective training in a limited training area. Few probable fields, where integrating the VR simulation training facility can be implemented in Bangladesh Army are discussed below:

Range Shooting Simulation. VR-based simulators can be implemented for night firing, low visibility firing, jungle lane shooting etc. VR can be a very good option to make it realistic, efficient and challenging. A situation might be developed gradually by AI considering different situations and can be presented to firer.

Figure 21: VR Simulator for Firing



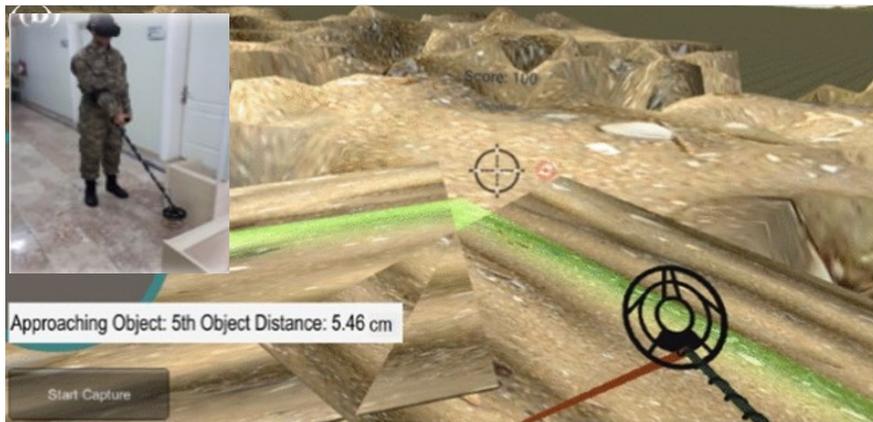
Source: Bhagat, Liou & Chang, 2016

Artillery and Mortar Fire Simulation. Generally, an artillery and mortar firing range require large area and need huge maintenance work. A VR simulator can reduce this problem. It can give a real feeling of artillery and mortar fire. With the help of VR, we can always see the hit in the target area and it is also possible to find the fault in the firing.

Combat Engineering.

(1) **Landmine Detection VR Simulator.** Different methods for landmine detection have been developed over time. In today's landmine detection training, soldiers are first exposed to theoretical instruction regarding the different types of landmines. Following this phase, they participate in on-the-job training. A landmine detecting VR training simulator makes it possible to train in a risk-free environment. Realistic simulations of the actual land conditions are also possible (Küçüksille, 2020).

Figure 22: VR-Based Simulator for Landmine Detection Training



Source: Küçüksille, 2020

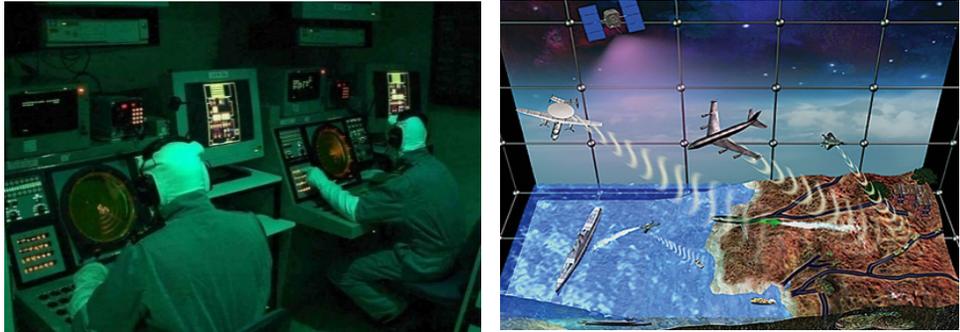
(2) **Bomb Disposal VR Simulator.** VR simulators will train bomb disposal operators with real-time bomb disposal scenarios. “Potentially the biggest difference between modern bomb disposal units and early models is the method of user control” (Gardner, 2020). With VR, the traditional training system can be replaced by a VR headset which will give the operators the on-field scenarios. Incorporation of haptic sensory feedback devices will give the exact experience that they are likely to face on the ground (Boyle, 2017).

Communication and Electronic Warfare (EW) Simulation.

(1) **Radio Wave Propagation Simulator.** VR simulators can be utilized in improving combat communication skills. Radio operators can get the real-time experience of setting antennas and have an idea of their actual propagation. Using VR, we can work with the theoretical values and check whether it is feasible or not. The actual terrain and weather information will be used to get a real-time experience.

(2) **EW Simulation.** The warfare landscape is moving faster with difficult digital scenery spanning information. The EW VR training solution simulates the most recent EW threats to teach operators how to recognize and quickly respond to them (Tecknotrove, 2021). STC&S is having an EW simulator. Incorporating VR modules will make it more realistic to train the soldiers and officers more effectively to participate in electronic warfare.

Figure 23: Electronic Warfare Simulator



Source: Tecknotrove, 2021

Anti-Tank Guided Missile (ATGM) Simulator. ATGM is a system that is designed to hit the moving target. It is very well possible to use modern VR technology to make it a very real situation of a moving target. The quick change of location of the target is very hard to hit. A real-time simulation can make that very easy and reduces much cost as the target is destroyed virtually.

Close Quarter Battle (CQB) / Jungle Lane Shooting. CQB and jungle lane shooting training are very important. By VR it is possible to create an actual CQB and jungle lane environment. With actual sound and vibration, it can be made real and the trainee can be able to understand what actually is hit. Similarly, house clearing, hostage rescue and other similar operations can be simulated really by VR.

Figure 24: CQB and Jungle Lane Shooting Training Using VR



Source: <https://bootcampmilitaryfitnessinstitute.com/2020/04/06/fortnite-vr-the-british-army/>

Armoured/ APC Driving VR Simulator. The Armoured vehicle VR simulation system offers thorough technical training for the crews, gunners, commanders, and drivers. The 3D geo-typical visual database allows for immersive training in a variety of environments, including the desert, jungle, and urban regions, as well as a variety of training areas, including build up areas, off-road areas, villages, test tracks, and trial locations, among others. The VR simulation system enables the tank and APC drivers to experience real-time driving.

VR Flight Simulator for Aviation. VR flight simulators can be used to teach pilots on how to handle risky situations in extremely lifelike simulated conditions that are likely to happen in a real aircraft. Some VR simulators are outfitted with complete hardware and software sets that replicate the cockpit, controls, dynamics etc. of a specific aircraft to enhance cockpit familiarization.

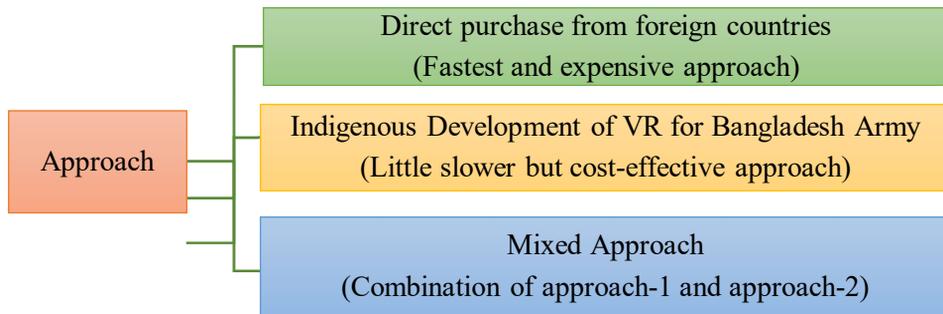
VR Based Medical Training. To reduce on-field mortality, it is essential to give the realistic training to military doctors. VR training can assist military medical professionals to practice making quick judgments when treating patients with life-threatening injuries, such as loss of limbs and burns, by simulating hostile working conditions like hectic and stressful battlefield circumstances (Visual, 2021).

Ways Forward to Implementing VR Simulation Training

Finalization of Probable Approaches. The author suggests that there may be three ways to incorporate VR technology for the Bangladesh Army in order to address the requirements of fighting future wars.

- a. **Direct Purchase (Approach-1).** The first approach is to purchase VR simulation technology directly from other nations. Although expensive integrating such technology can be accomplished in a very short time frame.
- b. **Indigenous Development (Approach-2).** The second approach is based on development and production of VR Simulation technology at home using indigenous method. Though it might take longer time, incorporating such technology in this situation will be cost-effective.
- c. **Mixed Approach (Approach-3).** A mixed approach could take a combination of approach 1 and 2. Knowledge gained from the developed nations, outsourcing and joint collaboration with external organizations will play pivotal role in mixed approach.

Figure 25: Probable Approaches to Procure VR Simulation Facilities for Bangladesh Army

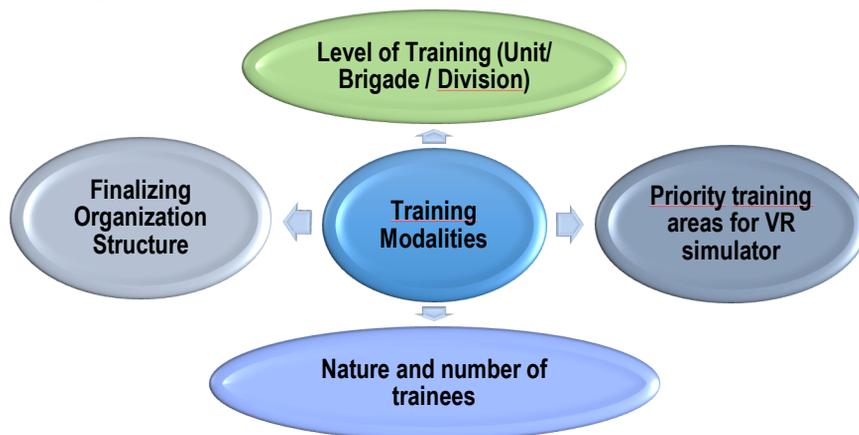


Source: Author's Construct

Setting up Organizational Structure of VR Cell. VR Cell in Bangladesh Army may be developed through Military Training (MT), IT and Signal directorates, where the Headquarter of Army Training and Doctrine Command (HQ ARTDOC), Military Institute of Science and Technology (MIST) and Bangladesh University of Professionals (BUP) may work on Research and Development (R&D) to perform the technical advisory role. The VR cell may determine the priority areas of VR simulation training and may adopt an approach of either direct purchase or indigenous development or a mixed approach to integrate VR technology into Bangladesh Army. To identify the probable source of trained manpower for VR cell, we may earmark the trained manpower of MIST, BUP, AITSO, IT Directorate, Expert military persons, Universities, Local civil experts and farms and foreign experts and farms, etcetera.

Training Modalities. Once suitable VR simulators are confirmed, HQ ARTDOC needs to finalize the training modalities for Bangladesh Army. There will be a need to determine the level of training (unit/brigade/division level) for VR simulators, priority training areas for VR simulation, nature, and the number of trainees to participate in the training year, and finalize the organization structure.

Figure 26: Finalization of Training Modalities by HQ ARTDOC



Source: Author's Construct

Hiring Technology from Friendly Countries. Hiring technology from friendly countries like Turkey and China might be one of the fastest options to adopt VR technology in our army. In this regard, reverse engineering like China might be another option open to us. Technology transfer protocol with friendly countries might ease the integration of VR in the Bangladesh Army.

Joint Collaboration with Private Industries (For Indigenous Development). The collaboration of civil industries is required to adopt VR technology in Bangladesh Army. Private software farms working on VR simulators for foreign countries might be earmarked for collaboration with the Army. For example, in 2021, Microsoft made a deal of \$22 billion to deliver 120,000 custom HoloLens kits to US Army.

Setting Up Proper Time-Line with Specific Vision. The timeline for procurement of VR simulators needs to be planned and finalized by Bangladesh Army. VR technology is changing rapidly and Bangladesh Army need to keep pace with the change to remain battle-worthy. Depending on the country's threat analysis and economic growth, the integration plan and procurement of VR simulators might be adjusted.

Ways to Attract the Local Industries. Bangladeshi programmers are recognized worldwide due to their talent. At present, few local industries are working in the field of VR simulators for foreign investors. Those local industries might be hired or collaboration might be done. To attract local industries, there is a need to invest in R&D and patronize start-up companies to develop VR simulator projects for Bangladesh Army.

Upgrading Existing Non-VR Simulators. VR technology is frequently used for training purposes at different armies of developed countries. It is beneficial for training exercises that are too expensive, rare, or dangerous to perform in the actual world. By simulating real vehicles, troops, and combat environments, training simulation in the military field helps small-scale groups or single soldier develop their combat skills. Driving in a replica of a military vehicle creates a secure environment for drivers in ground vehicle simulators. Existing non-VR simulators of Bangladesh army need to be upgraded to VR simulators with integration of AI technology gradually.

Conclusion

VR simulation training facility is a common tool of modern military training for more enhanced training with limited resources and space. Every individual has a distinct set of mental models that they use to interpret the world. These models are stored in the form of memories and real experiences, and they last for a very long period.

VR simulation training blends immersive VR technology with realistic training scenarios. It offers a fantastic tool for practice of potentially life-threatening activities like parachute jumps as well as activity-related training, such as handling weapons. Through VR training, people can develop their combat and decision-making abilities in response to a variety of events. It provides

an opportunity for units to train collectively, which can aid in learning how to collaborate effectively and comprehend the effects of their activities on one another. Additionally, VR training has been advanced in the healthcare industry over the past few years. Military medical students may be able to improve their treatment capabilities in a risk-free setting.

Bangladesh is embracing VR technology as part of the digitalization and by realizing the trends of modern-day warfare, policymakers and military leadership are in a positive mind-set for implementing VR Technology in Bangladesh Army. To develop these facilities, an organisational structure is a prime requirement. Adequate emphasis is to be given to VR training and R&D, where collaboration and partnership with experts and private sectors will be an important factor. The cost-benefit analysis of VR training facilities in Bangladesh Army needs to be weighed meticulously keeping the priorities in mind.

Recommendations

Basing on the above discussions, the following recommendations are made:

- a. For the integration of VR training facilities in Bangladesh Army, a mixed approach (direct purchase from foreign countries side by side indigenous development) may be adopted for speedy implementation, in connection with Government's Vision- 2041.
- b. VR Cell in Bangladesh Army may be materialised through MT, IT and Signal directorates, where HQ ARTDOC, MIST and BUP may work on R&D and perform the technical advisory role.
- c. Existing non-VR simulators can be upgraded with VR capabilities for realistic training of the officers and soldiers.
- d. Army Headquarters may carry out further study on the implementation of selected AI and VR training facilities with proper allocation of budget.

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EXPLORING OPPORTUNITIES BEYOND PEACEKEEPING IN MALI

Brigadier General A N M Manzoorul Haque Mazumder, ndc, afwc, psc, G, M Phil

Abstract

Bangladeshi peacekeepers in Mali are proving their worth and continuing to remain as ambassadors of peace like all other on-going missions across the globe. Besides conducting operational activities with utmost professionalism, Bangladeshi peacekeepers in Mali have a reputation for adapting to local exigencies and demonstrating a caring attitude towards the local people and their culture. As a result, Bangladesh enjoys considerable advantages to strengthen its position in Mali in manifold. Mali is going through a transition since the military took over power in 2020. It is like a renaissance of Malian identity to take absolute control of their country, leaving aside the herculean influence of former colonial master France and their European allies. Mali is now looking for new trade partners and it aims to enhance its capability and capacity to stand on its own feet. As such, Mali's prime objective is to ensure food security and promote local manufacturing capacity. Despite on-going security turbulence, it is high time for Bangladesh to probe into the trade, commerce, agriculture, processing and manufacturing industries of Mali as a part of strengthening our development strategy so that we can transform the challenges of Mali into our opportunities. Bangladesh Contingents in Mali have already earned their reputation as premier in peacekeeping operations. Now the time has come to trade off our brand value of peacekeeping to materialize our national interest.

Keywords: Ambassadors of peace, development strategy, challenges of Mali, exploring opportunities, brand value of peacekeeping, national interest.

Introduction

Bangladesh (BD) has celebrated its 50th Independence Day along with the birth centenary of the Father of the Nation Bangabandhu Sheikh Mujibur Rahman on 26th March 2021. Under the leadership of our Honourable Prime Minister, the country has been alleviated from least developed country to a developing country and we hope to be a developed country by 2041.¹ We are observing steady growth since 2009 with a foreign policy of 'Friendship to all, malice to none'. Our government stresses on economic emancipation as her major strategic approach is to attain desired objectives. To maintain our current impetus with accelerated growth, diversification of our market may be an important tool. This is imperative for sustainable and inclusive growth especially in post Ukraine War scenario. To strengthen our development strategy, it is high time we capitalized the brand value of BD as 'Peacekeeper'. BD is the number one in 'Peacekeeping' and highly applauded by the world community. We have enviable success in West African countries i.e., Sierra Leone, Ivory Coast and Liberia. Sierra Leone even declared 'Bangla' as their second language to express their gratitude and solidarity with BD.²

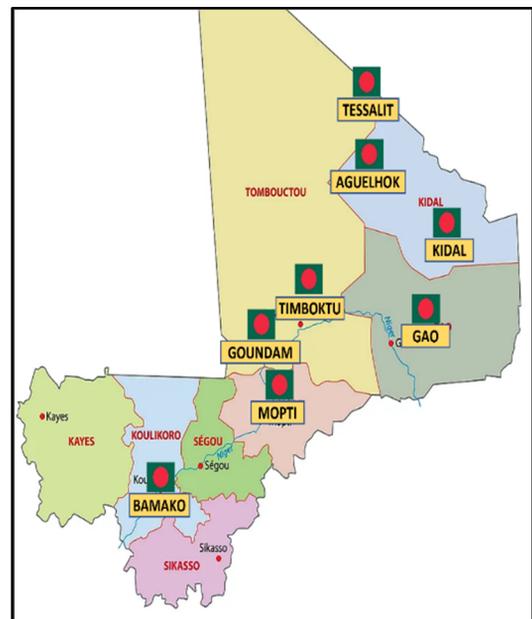
BD peacekeepers are now operating in Mali. They are equally proving their worth and continue to remain as an ambassador of peace like all other ongoing missions across the globe. Being one of the leading Troops Contributing Country (TCC) in United Nations Peacekeeping Operations (UNPKO), Bangladesh enjoys considerable advantages to strengthen its position in those countries manifold. As such, exploiting the established credibility, diplomatic endeavours may be aimed to have bilateral and sustainable political, economic and commercial ties with the host countries. Malian Government is desperately trying to shift its allegiance from its former colonial master France and its European allies. They are looking for new partners from Asia and other continents. In the paper, an effort has been made to explore the opportunities and challenges of BD in Mali and suggest pragmatic options.

This paper has been articulated predominantly with author's own experience as Sector Commander in Mopti, Mali from 02 October 2021 to 02 November 2022. Interactions with local elites, visiting local markets, informal interviews with important personnel, and consultations with open-source materials in print, electronic media and internet have also helped shaping various ideas and thoughts.

Shaping Opportunities by Peacekeepers in Mali

Bangladeshi peacekeepers are deployed almost all over Mali. Over the past nine years, they have won the hearts and minds of Malian common people. Their ability to adapt with local exigencies, demonstration of caring attitude towards local people, respect for their culture and religious affinity paved the way. It is only Bangladeshi contingents who spend handsome amount of money from their own, to facilitate socio cultural development of remote areas in Mali. Distribution of food and water, promotion of education and sports among youths, medical outreach activities and provision of veterinary support to locals are few examples of Bangladesh peacekeepers humanitarian activities. Consequently, Bangladeshi blue helmets are much more accepted than other countries. Bangladesh, being largest troops contributor for world peace under blue helmet has already become a brand name for peace.³ This is equally applicable in Mali. We can utilize this branding at our strategic advantage to enhance our economic relations with Mali. Malians are now aware about Bangladesh and its potentials. However, a great deal remains to be done. Mali is called to be

Map-1: BD Forces in Mali



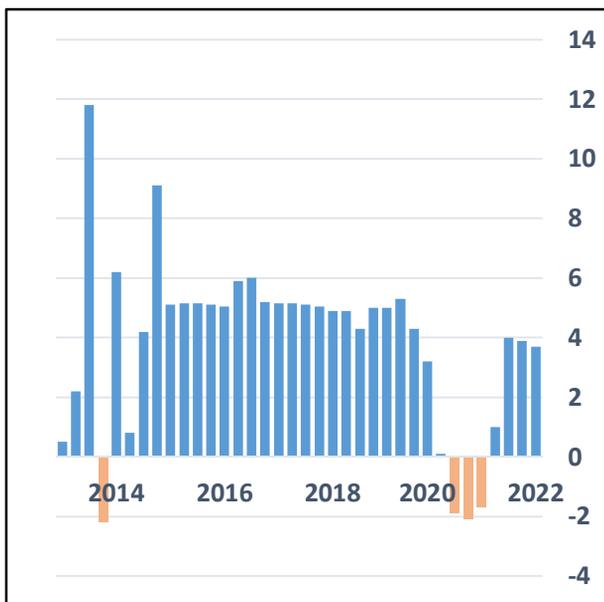
Source: Overseas Operations Directorate, Army Headquarters (August 2022)

the fortune of Africa despite ongoing conflict. Therefore, Bangladesh has an enormous opportunity to capitalize on its advantage to build a stronger economic and diplomatic tie with Mali.

Mali - A Land of Opportunity

Rich History with Commendable GDP Growth. Mali is the heir to a rich past stretching back to the Middle Ages, when this part of Africa experienced an economic, political, cultural and religious renaissance. In addition to gold, raw or carved ivory used to be exported across the Indian Ocean to Arabia and India. Mansa Musa was the ruler of the kingdom of Mali from 1312 C.E. to 1337 C.E. During his reign, Mali was one of the richest kingdoms of Africa, and Mansa Musa was among the richest individuals in the world. The ancient kingdom of Mali spread across parts of modern-day Mali, Senegal, the Gambia, Guinea, Niger, Nigeria, Chad, Mauritania, and Burkina Faso.⁴ Mali is one of the top five cotton and gold producing countries in Africa. It is the second largest state in West Africa. It is characterized by the extreme youth of its population, with almost half (48.8%) of the Malian population under the age of 15. After the crisis of 2012, the Malian economy is once again enjoying good growth. The real GDP growth rate increased from 3.2% to 5% between 2013 and 2019. The growth rate of the primary sector slowed slightly between 2018 and 2019, from 4.7% to 4.5%. However, due to COVID-19 health crisis, the 2020 GDP growth rate which was projected at 4.9% before the health crisis was reduced to 0.9%. The real GDP growth in 2022 is 2.5% which indicates the recovery process of the economic activities of Mali.⁵

Figure-2: Last 10 Years GDP Growth of Mali



Source: Central Bank of West Africa, January 22

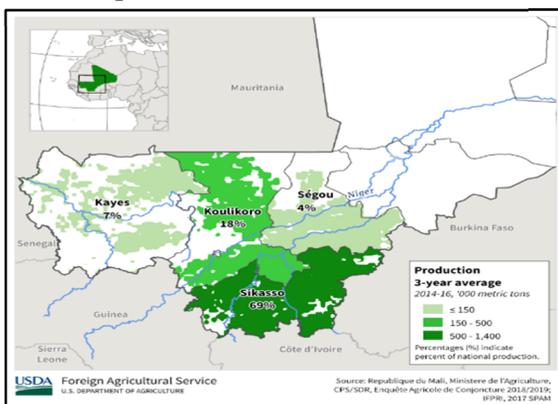
Mineral Resources of Mali. Mali is the third-largest gold producer in Africa after South Africa and Ghana. Gold is by far and away Mali’s most important export, comprising more than 80% of total exports in 2020. The Ministry of Mines estimates that Mali has 800 tons of gold deposits, 2 million tons of iron ore, 5,000 tons of uranium, 20 million tons of manganese, 4 million tons of lithium, and 10 million tons of limestone.⁶

Agricultural Potentials. Agricultural growth and expansion in Mali are very high along the riverine areas irrigated by the Niger River. However, only 7% of 43.1 million hectares arable land and 14% of 2.2 million hectares potential irrigable land are currently irrigated.⁷ Agricultural production in Mali is largely dominated by cottons and grains. Among the crops, rice, millet,

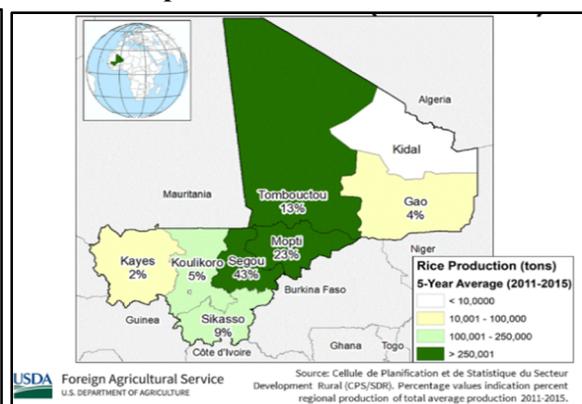
sorghum, wheat, sugarcane etc. are mentionable. Mali imports 70% of its food grain.⁸ Still 29% of its population are malnourished. Therefore, food security has become a major priority for Malian development agenda. They aim to develop their agricultural sector with major focus to food grains. Their irrigation system is also very limited. ‘Office du Niger’, a semi-autonomous government agency is administering a large irrigation scheme in Segou region of Mali.⁹ Through utilising water from Niger River, they produce 40% of Malian rice. The weather of Mali allows only one crop to grow during their rainy season (July to Sep). However, through irrigation, number of crops may be increased.¹⁰ The following maps illustrate major crop productions of Mali:

Present State of Commerce and Investment. Mali has an open economy. According to World Bank data, trade accounts for around 65% of country’s GDP. In Mali, customs duties are relatively low (average applied tariff rate is 10%) and there are very few legal or regulatory trade barriers.¹¹ Basically, Mali is an import-oriented country. Structurally, their trade balance is deficit. They are importing mostly from Senegal (\$468 million), France (\$401 million), UAE (\$234 million) and Austria (\$171 million).¹² Export and import profile of Mali is shown below:

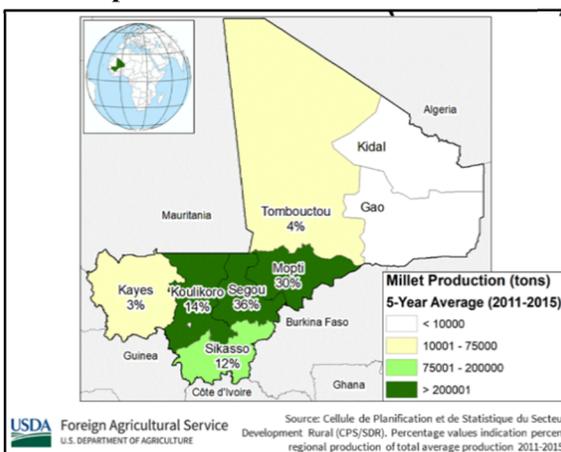
Map-2: Corn Production of Mali



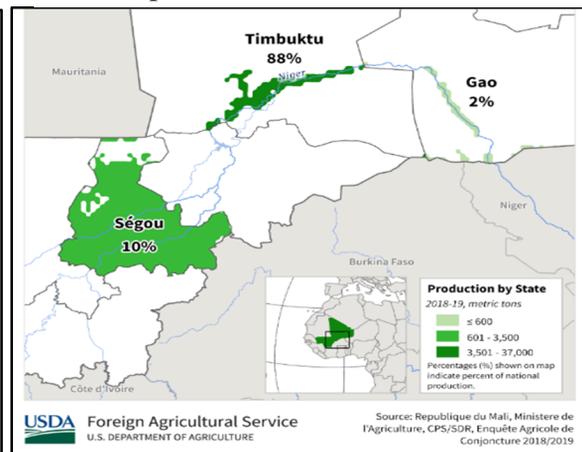
Map-3: Rice Production of Mali



Map-4: Millet Production of Mali

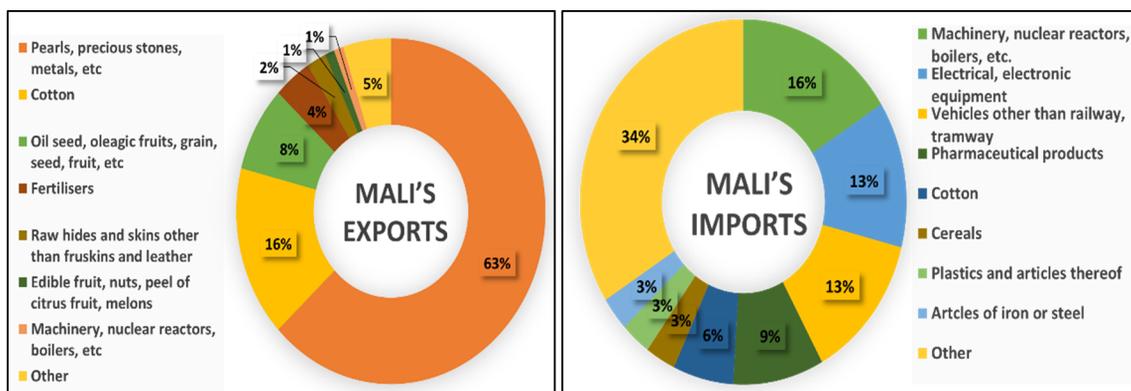


Map-5: Wheat Production of Mali



Source: Foreign Agricultural Service of USDA

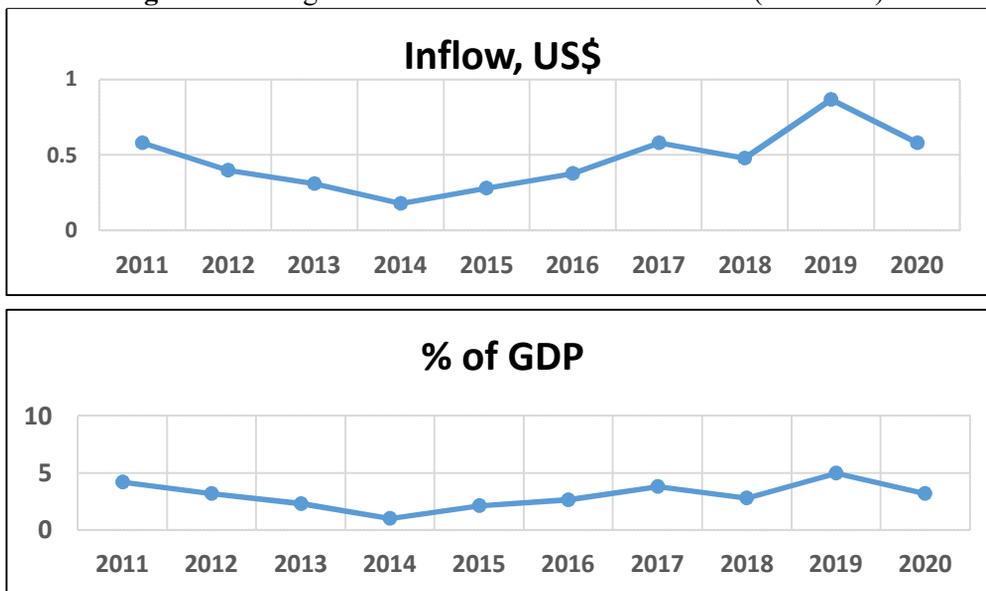
Figure-3: Mali's Export and Import Profile



Source: TDB Intelligence Unit, *The Dollar Business*, July 2016

Despite ongoing political and security crisis in Mali, their economic outlook remains promising because of their mineral resources, energy opportunities (especially in renewable sector) and high agricultural potential. They are also trying to diversify their economic relation beyond their traditional partners. The potential investment sectors include agriculture, agro industry, telecommunications, mineral exploitation, defense, power generation and distribution, machinery, new and used clothing, computers, processed foods, vehicles, low-cost motorcycles, electronics, consumer goods, office equipment and water resources. Foreign Direct Investment (FDI) in Mali as shown in the Figure-4 is also promising.

Figure-4: Foreign Direct Investment from 2011-2020 (In Billion)



Source: *The World Bank Data*, March 2022

Mali's Investment Promotion Agency (API-Mali) serves as an one-stop solution for potential investors and promotes both Malian and foreign enterprises of all dimensions. API-Mali provides information on business registration, investment opportunities, tax incentives, and other topics relevant to prospective investors.¹³ Foreign trade indicators of Mali are shown below:

Table-1: Foreign Trade Indicators of Mali

Foreign Trade Indicators	2016	2017	2018	2019	2020
Imports of Goods (million USD)	3,509	4,286	4,722	5,134	4,877
Exports of Goods (million USD)	2,538	2,896	3,584	3,675	3,923
Imports of Services (million USD)	2,419	1,323	1,394	1,532	1,605
Exports of Services (million USD)	435	441	486	672	542
Imports of Goods and Services (Annual % Change)	11	-14	-12	6	-3
Exports of Goods and Services (Annual % Change)	-2	11	-0	2	0
Trade Balance (million USD)	-577	-704	-383	n/a	n/a
Foreign Trade (in % of GDP)	64	58	60	61	60
Imports of Goods and Services (in % of GDP)	40	36	36	36	33
Exports of Goods and Services (in % of GDP)	23	22	25	25	26

Source: World Trade Organization; World Bank Data, March 2022

Potential Fields of Investment in Mali

Contract Farming in Mali. Availability of large arable land coupled with Malians dream of self-sufficiency in food grain offers an unique opportunity of contract farming in Mali. Mali does not have enough manpower and skill to utilize all their arable land. Niger River Authority (Office du Niger) has an irrigation system in the central Mali. Its full potential could not be materialized due to many limitations. This area is considered to be the 'rice basket' of West Africa'. Malian government wants to transform this area into an agro pole capable of ensuring food security at national and macro-regional level.¹⁴ As such, the state authority encourages foreign and national private investors to undertake agricultural activities in the office du Niger's land. South Africa and

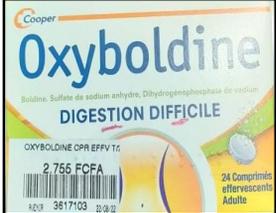
Chinese companies already involved in sugarcane farming with refineries in this area. A win-win contract will facilitate both BD and Mali. For BD, it will be an opportunity to migrate large number of skilled farmers which is widely available in BD. At the same time African tribes' people who are mostly pastoral or hunter-gatherer, would learn modern wet-rice cultivation from Bangladeshi farmers. Finally, the agrarian production will immensely benefit Mali as well as the government or private agencies of BD who will undertake this potential venture. Bangladesh is one of the leading exporters of cotton apparel in the world. As such, BD can invest in cotton farming in Mali to secure its sustainable supply chain which is the main raw material of our textile industry. There exist numerous opportunities to expand our cultivation from rice and cotton to many other varieties of crops, vegetables and fruits.

Agro-based Products. Demand for processed foods is expanding rapidly in Mali due to rapid urbanization, higher incomes, and employment opportunities for women. Now Malian market demand is shifting towards cheap processed foods and distribution through supermarkets and local convenience stores, mostly in urban areas. At present, the processed food market of Mali is dominated by European products. However, these products are costly compared to Bangladeshi processed food products. Already, processed food company PRAN is operating in Mali on small scale. The agricultural exports from Bangladesh have been growing at a rate of 18% for the last five years, in particular the exports of processed snacks.¹⁵ The Malian demand for agricultural products is also expected to increase in the coming days which provides a great opportunity for the Bangladesh processed food industry to expand its exports.

Livestock, Animal Products and Fisheries. Next to gold and cotton, livestock is Mali's third largest export commodity.¹⁶ With a pastoral background, livestock husbandry is a major source of livelihood in Mali. Mali is in possession of one of the largest livestock in West Africa. However, livestock potential industries are yet to be fully explored by Malians. There is also significant demand of poultry and dairy-products. Mali has also plenty of freshwater fishes with a high potential to increase its productivity. Our skilled manpower on freshwater fish may be of good value in this sector. Investment opportunities exist in cold storage, transportation and processing of both meat and fish. Modern tanneries and abattoirs have good prospect too.

Pharmaceutical Market. Mali imports numerous pharmaceutical products and the sector is dynamic. Due to lack of factories, expertise, and infrastructure, Mali will continue to import large quantities of all kinds of pharmaceuticals in the next several years.¹⁷ The probability of successful sales of pharmaceutical products will be greatly enhanced by the use of local representatives with an existing distribution network of small and large pharmacies. According to export data from the Export Promotion Bureau, Bangladesh exported medicines to 118 countries in 2019. Bangladesh is already exporting its pharmaceutical products to some of the African countries.¹⁸ Bangladeshi products will be much cheaper with a better quality compared to the current importers in Mali. It is to be noted that, in 2021-2022 India exported pharmaceutical products to Mali worth USD 40.64 million¹⁹ which is 22% more than previous year. Price of the commonly used European and Indian medicines are shown below as an example:

Figure 5: Price of few Commonly Used Medicines

		
<p>Antacid, France, 24 tablets, 417 taka</p>	<p>Paracetamol, Switzerland, 30 Tablets, 136 taka</p>	<p>Alatrol, India, 30 Tablets, 213 taka</p>

Source: Market Survey on 07 Sep 2022

Ready-Made Garment (RMG) Products. Bangladeshi RMG products are mainly marketed in the EU and US, accommodating 85 per cent of apparel exports. The EU market flourishes because of the Quota System and low-price product range of Bangladesh which is expected to be lifted in 2026.²⁰ As such, in order to reduce the dependency on only a few big buyers, Bangladesh may look for new markets in the West African Countries. Mali can be a potential market for Bangladeshi low-cost RMG products.

Consumer Electronic Products. The Consumer Electronics is one of the growing sectors in Bangladesh. The local brands now occupy most of the product categories which was once 100% import-dependent sector.²¹ From this year, Walton's electronic products, labelled 'Made in Bangladesh' is likely to be marketed in two West African countries, Mali and Senegal.²² As an authorized distributor of Walton brand, Simpara Group, which has extensive business networks in Mali and Senegal, will sell the Bangladeshi electronics products in the markets of the two West African nations. We may gradually embolden our effort in this sector.

Motorcycle Market. Motorcycle is the principal means of transportation for common Malians both in urban and rural areas. Due to inadequate public transports, two wheelers are increasingly becoming popular. Motorcycle taxi is also gaining popularity. Almost every family in urban area owns one or two motorcycles and the demand is getting higher day by day. In Bamako, it is difficult to move by car or other transports due to numerous motor bikes. Present market is dominated by Indonesia, China, India and Japan. Cheap Indonesian motorcycle named Power K is top favorite to locals.

Figure 6: Busy Bamako Street dominated by Motorcycles, Power K Bike



Source: Author's Own Collection

Smartphone Market. Bangladesh is on the brink of becoming self-sustaining in the production of smartphones with locally manufactured handsets.²³ In 2022, the country added another product to its export basket by exporting smartphones to Nepal. Walton is also set to export smartphones to the US which can be viewed as a remarkable endorsement of the leaps taken by Bangladesh's manufacturing sector. Bangladesh has a huge potential smartphone market in the countries of West Africa including Mali. Presently, the smartphone market of Mali is primarily dominated by Chinese companies.

Expanding BD Mission and NGO Activities. Many Bangladeshi NGOs and business firms are now operating abroad. The positive image created by the peacekeepers could be a great asset for these entities to open their operations in Mali. Ministry of Foreign Affairs may also make an effort to set up new missions and sub-mission in Mali, which may contribute positively towards achieving the national goals. Strong ties may also be maintained with various regional organizations especially with the African Union and ECOWAS which may increase the acceptance of Bangladeshi peacekeepers in West African countries.²⁴ To strengthen the diplomatic tie and foster mutual cooperation, BD Government may invite key political leaders, businessmen and government officials of Mali to BD during our national programs and ceremonies or any other occasions.

Getting Involved with UN Procurement Process. The entire annual procurement volume of the MINUSMA is about a few hundred million and about 90 percent of the total procurement is for the Department of Field Support. Bangladesh may try to register to take part in the UN procurement process for peacekeeping missions through tenders. Bangladesh can look at many areas including exporting Bangladeshi quality medicines, food, construction materials and other logistic supports.²⁵

Defence Cooperation. Defence cooperation between Bangladesh and Mali is at nascent stage. It is limited within one NDC and Staff Course vacancy per year from Bangladesh with very little exception. By now three Malian Colonels have completed NDC from Bangladesh with high satisfaction. They portray Bangladesh on a positive note in Mali. Bangladesh Country Senior in Mali is maintaining this network to grow and foster. There is a wide speculation that current ruling junta of military went for training in Russia and developed their link with kremlin.²⁶ Now Russia has become strategic partner of Mali.

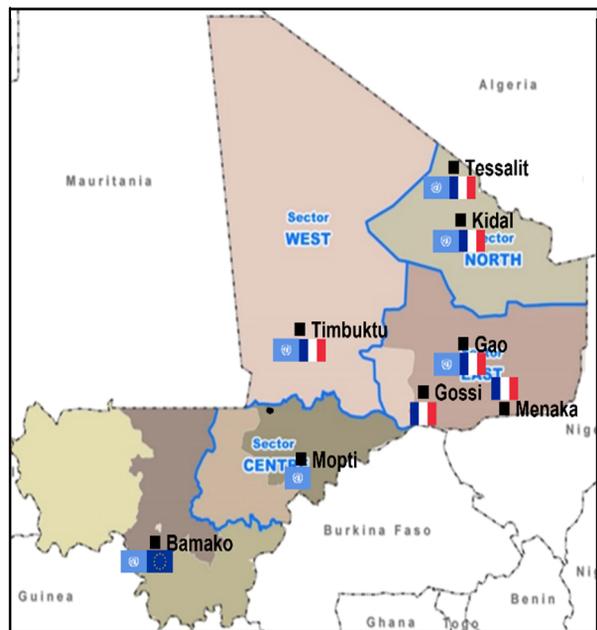
Understanding Power Rivalry in Mali and Underlying Opportunities

Present Socio-Political Scenario of Mali. It is characterized by unstable security situation, political crisis, and inability of Government to control its territory, high rate of population growth, inequality, illiteracy, corruption and unemployment. "In Mali corruption is common and systematic. Poverty is more in rural areas comparing to urban areas. Half of the population lives on less than 1.90 US\$ per day (2019)".²⁷ Following the 2020 coup, the present socio-political scenario in Mali is driven by a sense of true nationalistic fervor. Mali aims to rediscover itself without

foreign interference, corruption, and terrorists. They want to harness their own resources through reinvigorating their honour and pride. The present military government is enjoying much popular support because of their commitment to end extremism, corruption and the influence of foreign partners. However, military government is facing resistance from the political parties to organize national election soon and hand over power to legitimate president of the country. African Union, Economic Community of West African States (ECOWAS), European Union (EU) and other international organizations are also imposing restrictions on military government through sanctions, closing border and blocking free flow of money, to pressurize present government. “Transitional government has agreed to arrange national election in 2024”.²⁸

France and Its Interests in Mali. Africa is critically important for France. Former President of France Jacques Chirac acknowledged that, “Without Africa, France will slide down into the rank of a third world country”. His predecessor Francois Mitterrand prophesied in 1957 that, “Without Africa, France will have no history in 21st century”.²⁹ During decolonization of former 14 colonies of France in Africa, they introduced a financial system with a common currency named CFA for all of them. France will guarantee convertibility with francs (now euro), provided they deposit 65% of their foreign exchange reserves in a special account of French Treasury.³⁰ There are many clauses with this agreement, which restrict these countries to use their own money in times of crisis. On the contrary France is utilizing this money in their trade and commerce and giving loan to African countries with high interest rate. This is a vicious cycle. France has the world’s fourth-largest gold reserve, estimated at 2436 tons and valued at 111.8 \$bn. There is not a single gold mine in France. While Mali has no gold reserves despite having 860 gold mines and producing 50 tons per year.³¹ Africans are now increasingly vocal against French–African Policy. Africa is like a backyard garden for France. Uranium’s of Mali is fueling nuclear power plants of France. Northern Mali has been found rich with natural resources like uranium, gold, manganese, phosphates, lignite, lead zinc, and hydrocarbon.³² France wants to maintain stable African Political Order which is favourable to French interest. Problem of Mali is also viewed as an attempt by France to shape their national interest. “The Malian society is aware of the neo-colonial plan afoot to divide Mali in an attempt to claim ownership of its vast resources”.³³ Therefore, anti-

Map-7: Deployment of France and European Forces in Mali



Source: The Centre for European Reform, 31 March 2022

France feeling is increasing. It is a logical assumption that France will not let Mali free so easily despite withdrawal of all French force from Mali in August 2022 under termination of Defence Cooperation Treaty (TCMD) and Status of Force Agreement (SOFA).

Other European Countries and their Interests in Mali. Interests of other European countries are similar to that of France. Their aim is to secure resources of Mali. EU-Mali cooperation started in 1958. Under a security agreement in March 2020, a coalition force named Takuba Task Force was formed in Mali under a French Commander with members from 16 European countries. However, current relation of Mali with EU has reached to a new low, following anti-European campaign. Takuba Task Force ended its mission in Mali on 30 June 2022. Like France, European countries will also do their best to bring Mali into their terms.

Tension with ECOWAS. ECOWAS has a strong role to perform its mandated task namely Peace and Security, developing infrastructure, policy harmonization (to facilitate trade) and good corporate governance. It takes resolute actions to streamline its mandated task. Hence, present Malian Government is in crisis with ECOWAS as regards to its transition of power to legitimate political government. ECOWAS may impose economic or diplomatic sanctions if any of its member states deviates from its fundamental principle.

Influence of Russia in Mali. With the withdrawal of French forces from Mali, the Russian private security company or Wagner's emergence comes at a particularly fraught moment for Mali to fill-up the security vacuum. Western powers claim it to be Russia's strategy to spread influence in the region. The exact scope and nature of the Wagner Group's activities in Mali remain unclear. Early reporting noted that Wagner PMC (Private Military Company) personnel would train Malian defence forces and provide protection services for senior political leaders. The Wagner-linked actors have exploited domestic dissatisfaction with the security situation, including anger directed at France, to justify the supposed need for PMC support. Mali is receiving military hardware from Russia to strengthen their battle against terrorist groups.

Role of China. With deep historical ties, China has successfully maintained strong diplomatic relations with Mali. China's relations with Mali have been dominated by security concerns but also focused on economic and infrastructural development. China enjoys a big advantage over other foreign partners in Mali through its substantial investment in development projects intended to build security and stability.³⁴ The Chinese government promotes that the socio-economic development of Mali is key to bringing security stability and achieving peace in Mali. At the moment, China is the second largest country from which Mali imports merchandise, after Senegal.

Foreign Policy of Mali. Diverse societies of Mali with cultural heterogeneity and local conflicts have directed them to adopt a foreign policy favourable to national and regional stability. Over time, foreign policy of Mali has become more pro-western. They had an ambivalent relationship with its colonial master, France, since independence. They also maintained good relation with USA, Germany and other European countries. However, off late there is a tectonic

shift in their foreign outlook. Leaving its former allies, Mali is increasingly strengthening its tie with Russia. Role of China, especially on infrastructural and agricultural development is also noticeable. Many of its former allies have condemned and criticizing present Government of Mali for their inclination towards Asia. Mali has diplomatic mission in 7 countries of Asia including India and China.

Challenges of Bangladesh and Ways Ahead

Security and Political Instability. Ongoing political instability and security situation definitely inhibits free flow of foreign investment in Mali. Mali's low ranking (148th out of 190 countries) in the World Banks' 2020 Doing Business Report also reflects the myriad challenges foreign investors can face.³⁵ Actually Mali is going through a transformation and hence friction is inevitable. They are trying to diversify their trade, commerce and foreign relation. So, it is high time we took advantages of ongoing situation and turn challenges into opportunities.

Linguistic Barrier. Despite having promising business potential, barriers of communication pose a huge obstacle in Mali. Mali has 13 national languages in addition to its official language which is French. Bambara is the language spoken by about 50 per cent of the population of Mali.³⁶ Few of Bangladesh community who are doing business in Mali has acquired good language skill over time. Due to Mali's historical commercial links with France and familiarity with French cultural and business traditions, one needs to acquire working knowledge for his smooth sail in Mali.

Absence of Diplomatic Facilities. The role of the diplomatic mission is representation, protection of national interests, negotiation, reporting, and promotion of friendly relations with the host country.³⁷ Diplomatic missions can also facilitate in exploration of business opportunities. However, at present, there is no Bangladeshi diplomatic mission in Mali. The embassy of Bangladesh in Algeria deals with the diplomatic affairs in Mali. In absence of any diplomatic mission in Mali, Mr. Mamadou N'Fa SIMPARA, a renowned political and public figure in Mali has been appointed as Honourary Consular General of Bangladesh to Mali in the year 2014. In course of time, he has become a focal point to explore business opportunities in Mali as well as to build up bi-lateral relationship between Bangladesh and Mali.

Challenges Faced by BD Entrepreneurs/Businessmen in Mali. Only a few Bangladeshi Entrepreneurs are doing business in Mali. However, after interacting with few of them following challenges have been identified other than those mentioned above:

Market Information. It plays a vital role to understand market dynamics and make strategic business decisions. Bangladesh business communities are facing challenges to know technical details of product, quality requirements, duty structure, product pricing, financial leverage/policy, market demand etc. They also face difficulties to contact appropriate authorities or potential Malian businessmen.

Non-Availability of Adequate Skill Personalities. Lack of business professionals and market oriented specialized trained manpower pose significant challenges for new entrepreneurs. It is difficult to find authorized clearing and forwarding agents, professional distributors, skill personnel to negotiate with local merchandise etc.

Financial Capacity. Most BD entrepreneurs lack in managing sufficient business investments. They suffer from funds limitations for importing a greater amount of products from BD at their own cost as per the market demand. Besides, many of them have very limited access to formal funds in order to make handsome investment in Mali.

Marketing, Networking, and Logistics. It is very difficult for Bangladeshi entrepreneurs to develop a distribution channel in Mali due to the vastness of the country. At the same time finding a reliable local agent is also difficult. For example, creating a distribution network beyond capital like Gao, Ansongo, Kidal is really challenging. More so, due to lack of cooperation between the Federation of Bangladesh Chambers of Commerce and Industries (FBCCI) and Chambers of Commerce and Industry of Mali (CCIM), Bangladeshi business entrepreneurs are facing difficulties in marketing.

Trade License Documentations. Due to the absence of Embassy facilities, managing a trade license from the concerned Malian authority is really challenging. BD businessmen have very shallow knowledge to prepare the required import documents following Malian rules and regulations. At the same time, the dispute settlement procedure is very cumbersome, costly and time consuming.

Tariff and Non-tariff Business Environment. Sometimes Malian authorities are imposing more tariffs on a few specific products or apply non-tariff measures besides ordinary customs tariffs to control import trades. By these regulations, some of our competitors are receiving benefits under different trade agreements. As a result, we are losing in those competitive markets. Bangladesh has a very limited scope to negotiate with the concerned authority due to the absence of BD Embassy in Mali.

Lack of Publicity of BD Products. Malian people are not very familiar with BD products. Due to lack of publicity, the demand for BD products is very less. Besides, the vastness and remoteness of the country also create barriers for Bangladeshi entrepreneurs to apply any product publicity strategy.

Culture of Bribery and Corruption in the System. The extensive level of corruption in Mali is a major barrier to ensuring an effective business environment. It poses significant business risks for new entrepreneurs to secure their initial investments. Due to corruption, the trade license application process becomes troublesome, costly and time-consuming. In 2022, Mali ranked 137 out of 180 countries in Transparency International's Corruption Perception Index.⁴²

Recommendations

Following recommendations are made to strengthen diplomatic, financial and defence cooperation with Mali:

- a. BD Government may invite key political leaders, businessmen and government officials of Mali to BD during our national programmes and ceremonies or any other occasions.
- b. Ministry of Foreign Affairs may take initiative to send an assessment team to Mali in order to evaluate potential prospect of BD in Mali in coordination with Ministry of Commerce, Ministry of Agriculture, Expatriate Ministry, FBCCI etc. Our FBCCI may also invite Chamber of Commerce and Industry of Mali (CCIM). Besides, all potential fields of investment as proposed in this paper may be analyzed by professionals in respective fields.
- c. Ministry of Foreign Affairs may undertake a feasibility study to extend their support through establishing Bangladesh Embassy in Mali or Consulate Office.
- d. Ministry of Commerce may organize trade fairs in the West African countries to promote BD products among the locals.
- e. Ministry of Education may offer scholarships to Malian students to promote fraternity, cultural exchange and societal orientation.
- f. Defence cooperation may be strengthened with Mali through inviting senior leadership, offering more courses, organizing training exercises, seminars, workshop etc.

Conclusion

Bangladesh has already earned its reputation as a premier in peacekeeping operations across the globe. Bangladesh is now a brand in peacekeeping. It is time to exploit this and expand our economic activities towards West African countries. Already we have our glorious footprint in Sierra Leone and Liberia. People of Sierra Leone still remember Bangladeshi peacekeepers with reverence. Currently, Bangladeshi peacekeepers are operating in Mali with similar esteem and sense of gratitude from the locals. Mali is called to be the fortune of West Africa. Irrigated areas of Mali's central region along River Niger is called to be the rice basket of West Africa. Mali is naturally endowed with lot of resources. It was once a great emperor and their legendary king Mansa Musa bears testimony of their lost glory. Mali is a big country (8 times larger than Bangladesh) with very less population (8 times less than Bangladesh). Mali has got tremendous potentials in terms of trade and commerce, manufacturing, processing, agriculture, pharmacy etc. Diversification of market is a key ingredient to accelerate economic growth. Hence Mali can be a new frontier of Bangladesh. We should trade off our brand value of peacekeeping to materialize our national interest.

Mali is going through a transition. Its like renaissance or reawakening of Malian identity to take absolute control of their country, leaving aside herculine influence of former colonial master France and their European allies. Mali has already severed defence treaty with France. Consequently, all French forces (approximately 5,000) left Mali on August 2022. Mali asked other European forces to leave as usual. Actually, Mali has lost trust on western countries and common people doubt about true intention of their former friends. Mali is now looking for new friends focusing on capability enhancement and capacity to stand on own feet. Ensuring food security is one of the primary objectives. Despite ongoing security turbulence, it is high time for Bangladesh to probe into trade, commerce, agriculture, processing, and manufacturing industries of Mali. Endeavour may be taken to transform challenges into opportunities. Present socio-political environment is highly favourable for Bangladesh. Diplomatic effort along with unified manoeuvre of Commerce, Agricultural, Information Technology and Expatriate Ministries may bring enormous fortune for Bangladesh. Let us all put our hands together to build ‘Sonar Bangla’ as promised by our Father of the Nation Bangabandhu Sheikh Mujibur Rahman.

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