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# Optimising Defense Expenditure

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# Optimising Defense Expenditure

## The Issue

The debate on defense budget in popular media always revolves around the adequacy of fiscal allotment. Some of the most important aspects related to budgeting – processes, linkages with the strategy, doctrine and policy on expenditure - are ignored. Given the competing requirement for allocations in the defense budget there is need to find ways to do more with less to optimise the process.

The size of defense budget in India is about 64 billion dollars. It accounts for about 17 percent of total expenditure and around 1.6 to two percent of GDP<sup>1</sup>. As per SIPRI data of 2018, from 2013 to 2017 India has been the largest importer of arms<sup>2</sup>. In 2017, India joined the top five nations for defense expenditure. The other four nations in the group - US, China, Saudi Arabia and Russia - have their per capita incomes much higher than that of India. If we remove China from the group, the disparity is extremely stark; per capita income as per 2017 data is: US - \$59500, Saudi Arabia - \$55300, Russia - \$22,540, China - \$16600, India - \$7200<sup>3</sup>.

Almost all senior officers in the armed forces who articulate their views on the subject feel that India spends very little on defense budget. Hence our defense preparedness and modernisation plans suffer. The think-tank organisations of the armed forces support the view through different channels. Dr. Laxman K Behera of Indian Defense Strategic Analysis (IDSA) observes that the defense allocation is much below expectation. He also opines that no incentive has been given to the defense industry, which could have boosted defense production. His conclusions are that our defense preparedness and modernisation plans will continue to suffer. Besides, the 'Make in India' Plan will not take off since no financial incentive has been given to defense Industry in the budget by way of tax holidays or tax reduction<sup>4</sup>.

Incidentally, more than four decades of protected economy in India did not produce any world-class product. The public sector defense production units, with all the incentives but a captive, unhappy customer (Indian Armed Forces), did not achieve desired standards, though this is not a reflection on the efficiency of the individual organisations but on the complete eco-system. Air Commodore Ramesh Phadke, writing in the Indian Defense Review echoes the same sentiments<sup>5</sup>. Writing in Economics Times, Shri Somnath Mukherjee observes that we do not know weather we are spending less or adequate on defense budget. He maintains that our expenditure has always been more than two percent of GDP, which is the international norm. Very few countries are spending as much as we

spend on defense. As per him the crisis is not in the expenditure<sup>6</sup>. But we are not clear on what our 'defense preparedness' should be.

Shri Amiya Kumar Ghosh, an economist and former officer in the Indian Defense Account Services, has analysed the entire gambit of budgeting for defense expenditure in the light of global trends, strategic issues and macro economic aspects. His findings point to the fact that 'it is not the money allotted but the way it is allotted and spent, that are important aspects in defense budgeting<sup>7</sup>. Dr Laxman K Behera, in his book 'Indian Defense Industry: An Agenda for Make in India' (Chapters 7 & 8), brings out a number of suggestions and directions by various committees to improve resource allocation and impact on defense preparedness by better processes and increased component of indigenous systems.

### **The Process of Defense Budgeting in India**

A budget is a financial plan for a defined period of time. It gives out the financial resources allotted for specific purpose and mode of expenditure. For every resource allocation for a given purpose there is some opportunity lost for another purpose for which funds cannot be allotted. Budgeting activity needs to be linked with strategy and planning. In their article 'Linking Strategy to Planning and Budgeting' in Harvard Business School Publication, Robert S Kaplan and David P Norton write that budgeting activities need to address short term targets, allocation of resources and review of performances. The authors envisage objectives based on a balanced score card concept. These objectives need to have set measures for evaluation. Some of the goals need to have stretch targets. The linking process also needs to identify strategic initiatives and resource requirements that will close the planning gap<sup>8</sup>.

Shri Amiya Ghosh in his book 'Resource Allocation and Management in Defense: Need for a Framework' suggests Planning, Programming, Budgeting and Performance Evaluation System (PPBES) to ensure that the resource allocation is done as per shared vision and strategic intent to meet specific objectives in a policy framework. Once the programs are budgeted, execution or expenditure need to be evaluated to assess optimal achievement of objectives. As per Shri Ghosh, our core problem in defense budgeting lies in lack of strategic vision for budgeting, grossly inefficient and ad-hoc process of budget formulation, lack of synergy among the stakeholders, complete disregard to earlier decisions on the subject, including flouting the recommendation of the Standing Committees on Defense who analyse the budget once it is passed in the Parliament.

Let us look at the process of formulating the defense budget. The process of making defense budget commences sometimes in September with the issue of budget circular by the Ministry of Finance (MoF) to various ministries – Ministry of Defence (MoD) in case of defense budget. Focus of the process is on exchequer control system. Besides, there are instructions for cash management systems which require uniform expenditure throughout the year. Not more than 33 percent of allotted amount is to be spent in the last quarter. Generally, 92 percent of defense budget is dedicated for the three Services, remainder for Ordnance Factories (OF) and Defense Research and Development Organisation (DRDO).

Each Service makes projections for revenue and capital separately. Major parameters on which the Services and the DRDO make their annual budget include expenditure pattern during the past years, prevailing inflationary trends, committed liabilities, anticipated requirement of stores, new raisings, annual works program, ensuring economy and efficiency in defense spending in a planned manner, prioritisation of expenditure between competing programs, avoiding surrender of funds under capital account in the defense budget, supporting multi-year investment planning, and expenditure planning for optimum allocation of funds.

Once the three Services prepare their respective budgets, these are sent to their respective Integrated Financial Advisers (IFA) in MoD (Finance) or the finance cell of MoD for vetting. After vetting the proposals sent by the respective Services, the consolidated proposal for defense budget is sent to the MoF some time in December. The MoF allots funds as per the ceiling laid down for the year. The allotment is debated in the Parliament during the annual budget presentation and then passed. The MoD is informed of the allotment, which in turn informs the respective Services to plan the expenditure as per the allotment.

Generally, the allotment is about 16 percent less than what is asked. Since it is very difficult to reduce from the committed liabilities (maintenance, pay and allowances etc.) the axe falls on capital funds. Besides, the allotted funds are required to be spent during the financial year, and in case this does not happen the funds are surrendered. After the budget is passed in the Parliament and allotments made, all the relevant documents pertaining to the budget proposals by the three Services, DRDO and the OFs including the file remarks etc. are placed before the Standing Committee for Defense comprising of 30 members of the Lok Sabha and 15 members of the Rajya Sabha nominated by respective speakers. This process of post-allocation review was instituted in 1993.<sup>9</sup>

### **Standing Committee for Defense**

The Standing Committee analyses the budget from two perspectives, firstly, requirement within the framework of ceiling, and secondly, costs which are to be incurred for meeting the requirements. It cannot scrutinise the basis of requirements projected by the Services. Since its inception in 1993, the Standing Committee on Defense has given a number of comments and instructions:-

- To eliminate surrender of funds, the Standing Committee on Defense suggested in 2003 (and MoF agreed) that a defense modernisation fund to the tune of Rs 25000 crores be created. However this was not done in 2004-05<sup>10</sup>.
- The Standing Committee made a very important observation in 2004: ‘Keeping in view the rapid changes in the warfare technology .....there is an imperative need to constitute a high level empowered committee to examine the entire security gamut and suggest reforms, including restructuring of armed forces. The proposed committee should be given the mandate to suggest suitable manpower restructuring by trimming the force size with corresponding increase in use of advanced and sophisticated technology in our armed forces, and review

the war and peace establishments, which are existing since Second World War'. This is still pending.

- The defense budget allocation must be made in consonance with the Long Term Integrated Perspective Plan (LTIPP), which coincides with the five years plans. Thus the current LTIPP 2007-2022 should be the basis for defense budgets. The MoF agreed but did not implement the proposal. The LTIPP prepared by the three Services does not have budgetary support and budget allocation is on annual basis as usual.

## **Defence Budgeting in some Advanced Countries**

It may be relevant to scan the process adopted in some other developed countries. In the US, the Joint Chiefs of Staff study the Earlier Year Defense Plan (EYDP), which helps in formulating Joint Strategic Objectives Plan I (JSOP I). The JSOP I are translated in to JSOP II in light of policy planning guidance from where the plans along with policy frameworks are translated into policy programs. Based on the approved proposals, the National Security Council (NSC) studies the approved programs. The President is briefed for obtaining his approval. After the presidential approval the programs are supported by requisite budget. Since the approved programs are budgeted, no piecemeal procurement or acquisition is done. Also, all programs are in synch with the strategic objectives. The programs, once approved, are subjected to comprehensive Strategic Review at the national level to be followed by Defense Reviews at periodic intervals. Defense Reviews are the basis of defense plans, which in turn become the basis of defense budgets.

In one of the 'Quadrennial Defense Reviews' (QDR), it was decided that the country cannot afford 250 modern aircraft as recommended by the concerned Service, and upgrade of only 187 current aircraft with the modern avionics was approved. Also the Review recommended that F-22 aircraft would not be procured and the department will not fund the F-35 program. Recently, the US Government has decided that F-16, suitably modified, will be used till 2050!

The UK follows a similar process known as Strategic Defense Review (SDR). Decisions taken in the SDR are implemented in totality, or after revision due to budgetary constraints, immediately without any further debate or delay. During the SDR in 1997-98, it was decided to bring the defense and foreign policies together to ensure that defense budget is affordable. In a joint meeting, the two departments decided that defense logistics should be a joint service organisation. Thus the logistics arms of Royal Army, Navy and Air force were merged in to a single Defense Logistics Organisation. Later, the SDR decided that the defense procurement agency was needed to be merged with this organisation and this was done immediately. The combined organisation now is the 'Defense Equipment and Support Organisation'. The SDR also suggested that Britain needs to have two expeditionary forces centered on two aircraft carriers. When the proposal came up for costing, it was found that two expeditionary forces of this nature could be created only by cutting down the total number of ships to around 40. This was approved and implemented. By 1998, the British Navy was restructured to two expeditionary forces based on two aircraft carriers and

supported by 42 ships (26 surface ships and 16 mine hunters).

The Chinese political top brass decided that they should accord highest priority to Information Technology (IT) in the defense forces. They created a Task Force for Information War and set up four Universities for this field of military knowledge. Hacker group supported exercises were held in China and Information Warfare (IW) units were raised in 2003. The Japanese have also opted for giving highest priority to IT in the defense forces. However, they follow a defensive strategy.

### **Policy Guidelines for Expenditure of Defense Budget Allotment<sup>11</sup>**

The Indian Armed Forces follow the Integrated Financial Adviser (IFA) System introduced in 1976 for all expenditure of public money. The main aim of the Scheme was to expedite decision-making and to ensure that all expenditure proposals are subjected to due financial scrutiny before the expenditure is sanctioned/committed. In 1990s, MoD mooted initiation of further studies on the concept of Authority-cum-Responsibility Centers (ARCs) on lines of those adopted by the UK Army. This was further validated in the base logistics units in peace areas since delineation of performance indicators in these units would be comparatively easier. The New Management Strategy (NMS) for the three Services emerged from this idea, leading to the substantial delegation of financial powers in Revenue Expenditure to the three Services.

The primary role of financial advisers at various levels (Service headquarters to division and equivalent headquarters) includes careful and intelligent scrutiny of proposals involving expenditure of public funds, safeguarding of economy, efficiency and propriety in public finance, render advice on all financial matters, and to be consulted in all cases of specific expenditure proposals. All information, e.g. concerned papers, case files, papers relating to tender, original quotations, CST etc. to be available to IFA. The IFA can question the necessity for spending the given amount of money, whether the proposal is necessary, whether cost-effective alternatives exist, justification of expenditure in the circumstances, and whether individual items are in furtherance of Government policy.

The IFAs must be involved in budget formulation and provisioning review, budgetary control and monitoring of expenditure activities related to procurements. After getting involved in all the aspects of budget formulation, expenditure and procurements, the officers from the organisation (Controller General of Defence Accounts (CGDA) also function as external auditors for scrutinising the entire gamut of budgeting and expenditure<sup>12</sup>. In fact, as external auditors, they audit their own work! For undertaking these tasks the IFAs are expected to have phenomenal knowledge base and skills; the expected knowledge base for the IFAs in IFA System in Defense is listed under [www.cgda.nic.in/ifa](http://www.cgda.nic.in/ifa)<sup>13</sup>. Keeping in view the stringent controls and checks by the IFA System, large amount of funds have to be surrendered every year. Unspent funds in 2001 was Rs 4100 crore, in 2002-03 it was Rs 5000 crore - during the period 1999-2004, Rs 32,740.26 crore was surrendered. The unspent amount was primarily due to tedious procedure and compulsion to spend within a financial year.

## **Indigenous Defense Production Capability and Impact on Import: A case for ‘Make in India’**

Indigenization of defense equipment and system has been our national policy since 1947. There has been a declared policy to have 70 percent of defense procurements through indigenous sources. In fact for the first decade after independence, bulk of our defense equipment, arms and ammunition were indigenous. Steep increase in import for defense commenced post-1967. Hence there is a case to study the defense production capability in India since independence.

Defense production infrastructure in India emerged in the form of Board of Ordnance in 1775. The first Gun Powder Factory as part of this infrastructure was established in 1787 at Ishapore. Today there are 39 OFs. Of these, 18 were established by the British and five more were set up between 1949 to 1962. However, post-1962 military debacle, 16 new factories were established. Besides the OFs, India established nine Defense Public Sector Undertakings (DPSUs). Except for Mazagon Docks Limited (MDL), which was established in 1934, all other DPSUs came up post-independence.

At the time of independence, the Government hired a physics professor of Delhi University as an advisor for scientific research in military equipment. Later, the organization was expanded by involving senior serving officers from the armed forces. Proper research and development (R&D) commenced with the establishment of the Defense Research and Development Organization (DRDO) on 01 January 1958 by merging Defense Science Organization and Technical Development Organization.

Direct involvement of private sector in defense production commenced in 2001. However, its business activities were extremely restricted by the dominance of public sector units. It is only in 2015-16, after the ease of doing business improved considerably, that the private sector's share of exports jumped from an average of 28 percent (2011 to 2014) to 63 percent (in 2016). A large number of big-ticket projects have been awarded to the private sector. The total value of all these contracts amounts to Rs 10,13,971 crores. Post- 2015, the public sector units including the OFs do not get any favored leverage over the private sector units while competing for projects.

Nevertheless, the combined might of Indian public and private sector defense establishment is nowhere near the international standards. To get an idea of our international standing, our arms exports are less than one sixth of what South Korea exports; comparing with China would be a futile effort given the current status. In case of China the net arms imports have decreased compared to what she used to import in 1960. Besides, China has invested heavily in preparing for next generation warfare by establishing four universities for Information Warfare studies<sup>14</sup>. In our case, the amount of import since 1960 has increased many folds<sup>15</sup>.

	Arms imports 1 in 1960	A Arms imports in 2017	Percent Increase / decrease
India	4.4 million \$	0.358 billion \$	6 22 percent, Increase
China	0.43 billion \$	1.117 billion \$	5 0 percent, Decrease
Pakistan	42 million \$	1 million \$	1 69 percent, Increase

For the period between 2008 and 2012, decrease in the arms import bill for Pakistan is 24 percent. In our case there has been an increase of 36 percent during the same time period. There can be several reasons for continuously increasing imports contrary to our declared policy of increasing the indigenous procurement. Nevertheless, none of these reasons are justifiable given our technological prowess in other niche areas such as space and nuclear science. The Indian defense production units had produced some contemporary world class weapon systems during the first two decades after independence.

A small arms design team at Ambarnath Ordnance Factory took up the project of developing a rifle for the Indian Army (Ishapur Rifle 7.62 SLR) in 1958. There were a number of foreign vendors competing for supplying this product. During the trials of the proto-types, all foreign samples were rejected by the General Staff. Even the Ishapur rifle was found to have certain shortcomings - the General Staff wanted shorter barrel and longer range! The then Raksha Mantri involved the then Cabinet Secretary to coordinate the project. After prolonged trials and some improvements, the Cabinet Secretary noted, “It shall be the pride of India and Indian jawans to have an Indian designed basic weapon provided to meet the minimum operational requirements which, we believe it does”. The 7.62 mm Self Loading Rifles produced by Ishapur Ordnance Factory were thus inducted into the Indian Army.

Another world class weapon system was produced by Hindustan Aeronautics Limitd (HAL) in the form of HF-24 (Marut) fighter jets. The Indian Air Force (IAF) had its first squadron equipped with Marut in April 1967. As per Air Cmde Jasjit Singh, “When it started to fly, the HF-24 Marut attracted world attention with wonder, disbelief and jealousy. Though slightly under-powered just after take-off, once it accelerated, it was an outstanding strike aircraft of its day, which still had an enormous potential for further improvements”. Unfortunately, in 1970, HF-24 was shelved in favor of Mig-21, pushing the country back on the disastrous path of increasing imports of expensive weapon systems and decreasing learning curve.

Contrary to HF-24 project, the Samyukta EElectronic Warfare (EW) project has ensured induction of totally indigenous EW systems in the country with active involvement of the Corps of Signals, DRDO , Tatas and Bharat Electronic Limited. Another example of synergistic approach among various stakeholders in development of weapon system is the indigenous development of 155mm/45 caliber artillery gun Dhanush. Based on the Swedish gun Bofors, a team comprising of members from the Army, DRDO, OFs, quality assurance,

and maintenance agencies developed the Gun within 16 months as against the allotted time of 60 months. As per the users, the Gun is 20 to 25 percent better in all parameters compared to the Bofors and has 80 percent indigenous components. However, as per the experts in the field such synergistic approach has been rare till very recently.

In case of the Light Combat Aircraft (LCA) Project, taken up in 1983, the IAF was to depute an officer in the project team. For 16 years the IAF did not do so. It is because of the nudge by the Government that the LCA is being inducted in the IAF. There are issues related to the exorbitant cost of LCA, which are again being resolved by the Government. If not for Government's pro-active approach, the LCA would have met the same fate as that of HF-24.

In the case of Main Battle Tank (MBT) Arjun, the Army's approach has been more to obstruct the project than to support it. The Army put more stringent quality norms on Arjun than what they placed on its Russian competitor T-90! This was observed by the Comptroller & Accountant General (CAG) in their report on the MBT project. Again, due to continuously changing qualitative requirements placed by the Army, the MBT weighs much more than what the assault bridges in the combat zone can support. The cost of MBT Arjun is also much more than the cost of T-90.

The CAG has also indicted the Navy for delays in communicating qualitative requirements and frequent changes in 12 of their projects. However, poor management, bureaucratic approach and general ills of public sector undertakings - excessive patronage, poor staffing, lack of global competitions, outdated management practices, negligible R&D, rigid hierarchies, lack of incentives for exceptional talent, demotivating work culture etc. - have led to steady erosion of value-addition capabilities amongst these establishments. It may be prudent here to scan some of these factors.

The productivity of Indian Defense Production Undertakings on an average is \$ 81000 of sale per employee; in case of some of the leading arms exporting private companies of the world the average productivity per employee is \$ 362000. Thus the average arms exporting Multi-National Companies (MNC) are more than four times as productive as the Indian companies. India spends about 0.9 percent of GDP on R&D. Compared to this, China spends 2 percent and South Korea 3.6 percent of GDP on R&D. None of the leading arms exporting countries spend less than 2 percent of GDP on R&D. Countries that are exporting weapon systems and ammunitions to us have created sprawling defense industries, created lucrative employment for their citizens and enhanced their technological prowess. On the other hand, our defense industries have stagnated and remained inefficient and unproductive. The private sector, till very recently, was generally kept out of this sector.

In spite of spending huge amount of national and foreign currency we do not appear to be prepared for the kinds of conventional and non-conventional threats that security experts envisage. Another aspect, which need to govern the defense expenditure is the type of conflict spectrum likely to be encountered by us. In the information age or knowledge era, conventional and declared wars among powerful nations will be less probable.

However, undeclared war in the form of geo-political military dominance, trade, economic competition, net-war, perception management and proxy war being fought by countries like Pakistan will be very common.

That does not mean that we can lower our guard on preparation for the conventional war, only that effort need also to be on developments of information operation, perception management, non-lethal and less-lethal weapon systems, cyber security, and guarding against harmful propaganda through social media and Internet. If we are forced to enter the conventional war, the strike must be hard, sustained till we achieve our strategic objective, calls the nuclear weapons bluff, and most importantly, terminate the conflict in a way that we do not have to fight a future violent war for some years to follow.

### **Visible Changes Since May 2014**

In May 2014, a National Democratic Alliance (NDA) Government assumed office under Prime Minister Narendra Modi. During these years, the NDA Government took major steps to remove the monopoly of DPSUs in arms and ammunition procurement. Meanwhile, a large number of pending defense projects were cleared by the Government. Some of the contracts allotted to the private sector include 814 artillery (mounted) guns under project Dahnush for Rs 15,750 crore and Battlefield Management Systems worth Rs 500,000 crore (regrettably, there are talks of this project being shelved due to lack of funding).

In April 2018, the Indian Prime Minister addressed the Defense Expo at Chennai. This was the first time the head of the Government spared so much attention to defense expo. Some major contracts were signed between Tata and Lockheed Martin, Bharat Electronics Limited (BEL) and Larsen & Tubro (L&T), Boeing with HAL and the Mahendra Group. Dedicated fund allotment was made for the Small and Medium Enterprise (SME) to participate in defense production. However, it is too early to infer whether this approach will be sustained to ensure 70 percent indigenous content in defense production, and generation of employment and revenue from the defense industry.

### **Suggested Strategy for Defense Budgeting**

Strategy has three major ingredients. First ingredient comprises of the core ideology, which remains fixed and defines the nation. The second aspect is the envisioned future, which reflects the aspiration and dreams of people. The third is a set of lofty goals, which enshrines the productivity and innovative capabilities of the nation as a synergized team.

Defense budgeting must be based on these three distinct and well defined pillars, to wit: The core ideology of national security; envisioned present and future capability of armed forces along with dynamic approach of projecting military power in consonance with foreign policy; and knowledge and innovation driven productivity of the people to create and maintain resources. These pillars must be the firm edifice of our geo-political posturing. It needs to be clearly understood that defense budget is not just an acquisition plan. It has more to do with capability building and force structuring.

Our core ideology as a nation remains peaceful coexistence with uncompromised sovereignty and national honor. Sovereignty of the nation must be centered on the citizens of the country. Hence terrorism, proxy war of any kind declared or otherwise, which harms our citizens, must be treated as threat to national security. The military and related forces should be allowed to take appropriate action to fight such threats. Sovereignty must also include territorial integrity, and well-protected space, air and cyber domains. At the same time strong, committed, effectively led, properly equipped, enabled professional armed forces must form the basis of projecting foreign policy for maintenance of peace as per our stated ideology.

Two other very important factors of strategy for budgeting must include the economic dexterity and strength. The primary role of economy of any country is well-being of the people by creating opportunities and eco-systems which promote creation and distribution of wealth. Our people and enterprises must be highly productive and technologically advanced. There is no place for wasteful expenditure. Indigenization must be the preferred option so that defense expenditure generates employment, helps in earning foreign exchange and sharpens our technology as also learning curve. The process of indigenization must create efficiently managed supply chains, which may include some of the enterprises of our strategic partners. As an example, we can study the way the Japanese have mastered the art of achieving very high outcome at comparatively very low input. We can also learn from the Israeli example. A tiny and young nation is a world leader in research, innovation and technology development. Bulk of the top international companies have their R&D centers in Israel.

### **Some Policy Guidelines for Optimization of Defense Expenditure in India**

**Doctrine.** The Joint Doctrine for Armed Forces issued on 18 April 2017 needs to be debated to formulate a realistic, coherent and shared national vision on defense and national security policy<sup>16</sup>. This must involve the three Service Chiefs, Chief of Integrated Defense Staff, defence, foreign, finance, and home ministers, selected members of industry, and academia, all under the Prime Minister's Office (PMO). Doctrine and the emerging strategy will dictate the policy for defense expenditure. As an example, the Air Land Battle doctrine formulated by the US Department of Defense laid the foundation for creating new force structure, its related technologies and weapon systems<sup>17</sup>. It may appear that our doctrine in the present form will not have the desired clarity on force structure, and weapon, equipment or systems profiles. Hence, there may be a need to revise the Doctrine so that those who scrutinize it can draw necessary conclusions and plan ahead.

**Perspective Planning.** The defense Long Term Integrated Perspective Plan (LTIPP) needs to be vetted by the same apex body, which approves the doctrine and the strategy. There must be provision for reviewing the LTIPP every two to three years. In fact, the LTIPP must flow from the doctrine and strategy. The approved LTIPP must be provided budgetary support. There must be provision for ensuring extended time lines for incurring this expenditure. The annual ritual of withdrawing the unexpended funds must stop.

**Budgeting.** Defense budget must be allotted program wise with clear policy for execution and evaluation in light of approved programs and related objectives. The programs will contain systems and define the capacity being acquired by the program. Programs must flow from the LTIPP and must specify the desired capability build up, with justification. It will be prudent to build-in alternatives to each program to specify the opportunity cost of choosing the selected program. The opportunity cost must be considerably below the pay-off.

**Expenditure Management.** As per the current procedure through the IFA system, expenditure of allotted defense budget involves very heavy volume of paper work with hardly any automation. On an average, more than six months are required to complete the process if each event in the process is completed as per the planned time schedule. Hence, in spite of the best efforts by the concerned military staff, a number of projects get stalled as the process for completion exceeds the time for which the budget was allotted. We need to automate the entire process at the earliest. The Electronic Data Interchange (EDI) architectures supported by smart software agents will cut down the time in preparation and processing of documents. Instead of taking around six to eight months, the automated systems could ensure approvals within a week. Even the accounting system in the Armed Forces need to be automated and be available online on dedicated defense network.

**Information Technology (IT).** Generally, 5 percent of modernization is on software and rest on hardware. In case of developed nations who export bulk of their production, the emphasis is on IT and software content (50 percent)<sup>18</sup>. There is a need to improve the ordnance to intelligence component ratio in the weapon systems; for example, with upgraded avionics, the US Air Force will use F-16 aircraft till 2050. We need to exploit our core competence in IT, tele-communication, network management and management skills .

**R&D.** There is a need to enhance R&D funds and improve relevant efficiencies. Even in manufacturing we need to follow the principles of modern supply chain management systems so that series of independent enterprises collaborate, cooperate and coordinate to achieve common strategic goals and product quality<sup>19</sup>. The OFs , DPSUs, DRDO and the Services must act as part of a big supply chain rather than operating in their own silos. We have been able to produce formidable weapon systems where such synergy was achieved. At the same time, the defense production infrastructure must spread to the private sector and SMEs.

**Supply Chain Management.** There is need to learn the vendor development, supply chain management, and lean manufacturing from the likes of Toyota Motors<sup>20</sup>. Toyota - and even other Japanese manufactures - do not have the concept of lowest cost tender. In fact, they do not have cost as one of the factors when they chose suppliers. Japanese manufactures address the cost factor indirectly. These companies chose their suppliers based on their proven capability of innovation, speed of learning and processes for keeping the costs low over a long period. Besides, once the suppliers are chosen these are not changed for decades. Suppliers to the Japanese firms become their strategic partners. As

result the products are high on quality, customer satisfaction and cost. The Japanese supply chains always perform better than their western rivals. The competition today is not among the individual enterprises it is among supply chains. The entity, which manages their supply chain better for exceeding customer satisfaction comes out to be the winner<sup>21</sup>.

## References and Notes:

1. SIPRI data 2018.
2. <http://www.firstpost.com//...../budget-2018-jaitley-increase-defense-budget-7.81-percent>
3. World Economic Forum Data 2017.
4. Behera Laxman Kumar 'Indian Defense Industry An Agenda for Making in India' Institute of Defense Studies and Analysis (New Delhi) Publication Pentagon Press 2016. ISBN 978-81-8274-905-4.
5. Phadke Ramesh Air Commodore ' A Clear Message to the Armed Forces' IDR 04 March 2017.
6. <http://economicstimes.indiatimes.com>> 9 Feb 2018
7. Ghosh A K 'Resource Allocation and Management in Defense Need for a Framework' Knowledge World Publication 2013 ISBN 978-93-81904-45-9
8. Kaplan Robert S and Norton David P Linking Strategy to Planning and Budgeting Harvard Business School Publishing <http://mycourse.aalto.fi/pluginfile.php>
9. IDSA Task Force Report- India's Cyber Security Challenge- 2012, ISBN 8186019987).
10. Standing Committee on Defense Report 2004-05 .
11. Reading Material on IFA System Volume Three- CGDA. [cgda.nic.in/ifa/manual/trgmat-army-pdf](http://cgda.nic.in/ifa/manual/trgmat-army-pdf)
12. IFA System in Defense- CGDA [www.cgda.nic.in/ifa](http://www.cgda.nic.in/ifa)
13. [cgda.nic.in](http://cgda.nic.in)
14. SIPRI 2017-18.
15. Vinay Kumar Defense Expo: A Brief Report India Strategic May 2018( [www.indiastrategic.in](http://www.indiastrategic.in)
16. Joint Doctrine Indian Armed Forces 2017 <http://ids.nic.in/dot-jointdoctrineindianarmedforces2017.pdf>
17. Toffler Alvin and Heidi "War and Anti War" Little Brown and Company, Boston, 1993.
18. Hamel Gary, Prahalad CK Competing for the Future (21<sup>st</sup> Reprint 2014) Harvard Business School Press Boston Massachusetts Mcgraw Hills (India) Private Limited New Delhi ISBN 978-0-07-048671-3.
19. Mari Sako Supplier development at Honda, Nissan and Toyota Comparative Case studies of Organizational Capability Enhancement Industrial and Corporate Change Volume 13 Number 2 pp 281-308.
20. <http://www.nao.org.uk//defence/vfm/wp-content/uploads/sites/Case-Study-Toyota-motor-Europe>
21. Mentzer John T Supply Chain Management (Twelfth Printing 2011) Response Books a Division of Sage Publications India Pvt Limited ISBN 10:978-81-7829-042-3((India-pb).

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The Vivekananda International Foundation is an independent non-partisan institution that conducts research and analysis on domestic and international issues, and offers a platform for dialogue and conflict resolution. Some of India's leading practitioners from the fields of security, military, diplomacy, government, academia and media have come together to generate ideas and stimulate action on national security issues.

The defining feature of VIF lies in its provision of core institutional support which enables the organisation to be flexible in its approach and proactive in changing circumstances, with a long-term focus on India's strategic, developmental and civilisational interests. The VIF aims to channelise fresh insights and decades of experience harnessed from its faculty into fostering actionable ideas for the nation's stakeholders.

Since its inception, VIF has pursued quality research and scholarship and made efforts to highlight issues in governance, and strengthen national security. This is being actualised through numerous activities like seminars, round tables, interactive dialogues, Vimarsh (public discourse), conferences and briefings. The publications of VIF form lasting deliverables of VIF's aspiration to impact on the prevailing discourse on issues concerning India's national interest.



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