BUDGETARY REFORM FOR SUSTAINED MODERNISATION

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In all the recent budget speeches, the finance ministers, while indicating the allocations for the defence budget for the year, have invariably stressed that the process of modernisation will not be allowed to suffer. Specific references have been made to the increased allocation for capital expenditure.

In our discussions, modernisation has been equated with acquisition of 'hightech' equipment, for which increased allocation for capital expenditure is required. For example, the aspect of the defence budget for 2005-06 which has been highlighted the most is the steep increase in allocation for capital expenditure (Rs. 34,472 crore), which constitutes 41.4 per cent of the defence budget (as against an average of 30 per cent, over the years), as the government's commitment to modernisation of the armed forces.

The question that normally arises is: can this kind of increase in capital expenditure be sustained in the future?

As the expenditure on operation and maintenance has also been subject to steady increase, in order to sustain the efforts towards modernisation in the future, defence analysts have often stressed the need for increasing the allocation for the defence budget in a more significant way to take it from the existing about 2.4 per cent of the gross domestic product (GDP) to 3 per cent of the GDP. This point has been made in several forums.

The only jarring thing about this straightforward analysis has been the inability

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of the Defence Department to spend the amounts allotted in the Budget Estimates stage, from 1996-97 onwards until recently, leading to surrender of thousands of crores of rupees under the revenue account, as well as adding to the capital account. The comptroller and auditor general, in their reports on budget management, did not go beyond it to find out the underlying causes. An in-depth analysis of this phenomenon is still awaited. It is basically treated as an aberration and is probably expected to be overcome if the increased allocations for the defence budget are sustained over a period of time. They, therefore, having characterised this feature as bad financial management, an increase in the allocation for the defence budget upto 3 per cent of the GDP is stressed by defence analysts.

What is its prospect anyway?

For a recent policy statement on the subject of overall security strategy, one can do nothing better than refer to the speech of Prime Minister Manmohan Singh delivered at the combined commanders' conference on October 20, 2005. The prime minister, while reiterating that the government will make the required funds available to support the ongoing modernisation drive of the armed forces, said that the government could concede the military's demand to peg defence expenditure at 3 per cent of the GDP if the economy grew at 8 per cent annually. "Hence, our priority is to pursue policies to generate faster economic growth and mobilise more resources."

The prime minister underlined the need for developing close ties with as many major powers as possible. "We have entered into strategic partnerships with the US, Russia, Japan and the European Union and (we) are pursuing strategic cooperation with China."

Achieving energy security has became a very important plank of the nation's security policy. Therefore, expansion of the civilian nuclear programme is now categorised as of *vital national interest*, as economic growth is closely related to energy security. This would naturally call for cooperation and partnership between nations.

It appears that the government is committed to pursue a strategy of partnership and cooperation as the priority is to achieve growth of GDP at 8 per cent per annum. Higher GDP growth is also a strategic necessity, as that will

^{1.} Report in The Hindu, October 21, 2005.

determine whether 3 per cent of the GDP can be allocated for defence expenditure on an annual basis.

The corollary would be that with a GDP growth rate of around 6 per cent, the government can do no better than an allocation amounting to 2.4 to 2.5 per cent per annum, notwithstanding its commitment for modernisation of defence.

Dr Singh has outlined three broad pillars for comprehensive security strategy:

(i) to strengthen the country economically and technologically;

(ii) to acquire adequate defence capability to counter and rebut threats to security; and (iii) to seek partnerships to widen the policy and development options.

It is the wider view of security that the prime minister has put forward, with its economic, political and social connotations. In this context, he drew attention to the important role that diplomacy and civil society can play in influencing

India's neighbours to evolve a moderate and stable political and social environment. The aim clearly is to have stable and cooperative relationships with the neighbouring countries.

With priority given to expenditure on economic growth and with a security framework emphasising cooperation and partnership, allocation for the defence budget, to the extent it indicates the nation's priority and as a signal of intentions, would probably get only moderate hikes in the next few years.

The other point that comes out of the strategy of "three pillars of security," is the

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requirement to build "adequate defence capability" to meet the threats. This means that the requirement of modernisation has to be seen in the wider context of capability building of the armed forces.

There is no "rational" size of defence budget. Its rationality is determined by whether a rational method has been adopted in arriving at the desired level of expenditure for each of its components. For determining the required capabilities, one has to move methodically in assessing existing deficiencies in capabilities, to meet the existing challenges and those likely to emerge in the future, to determine which specific capabilities are to be built and what would be the supporting capabilities. This would be the basic step required for projecting the budget requirement on a rational basis. It would be desirable to let the aggregate size of the defence budget

emerge as a byproduct of decisions on specific expenditure programmes, rather than focus attention on the aggregate size of the defence budget and then determine where it would be spent. There is no "rational" size of defence budget. Its rationality is determined by whether a rational method has been adopted in arriving at the desired level of expenditure for each of its components. Similarly, whether more needs to be allocated for the defence budget would depend on the answer to the question of which capability building programmes need to be augmented. That would, in the context of limited resources, also lead to the question of allocation, under which, which programme or commitment can be reduced. To raise these questions, the budgeting system must have a zero-based approach, a role which our present incremental mode of budgeting cannot play.

Discussion of these issues as a part of the budget formation exercise, where the key role is played by the Service Headquarters, would require instituting a proper deliberative and decision-making apparatus, with a view to evaluate existing programmes, make recommendations regarding changes to be made, and balance various requirements in a coherent manner. It has also to bring up the vital mismatch between requirements in a specific area with the availability of resources, for high level decisions. It has to be an iterative and continuous process. Balancing of allocations for competing needs would call for many inputs, including fiscal and programme guidance from the top, inputs from operational commanders, and exercising of judgment at the top military level. Attention has to be on building the "right" military capability while allocating the resources.

Air Commodore Jasjit Singh highlighted this basic issue while commenting on the defence budget for 2005-06 when he stated: "Rupees 83,000 crore is a phenomenal amount of money for a developing country like ours. But the crucial factor that should guide our judgment is whether this expenditure can deliver the type and level of required military capability. In other words, weigh the credibility and affordability of defence capability that this money is supposed to buy in relation to like Defence itself cannot be treated as an objective, as an end in itself, but can only be treated as a means, that is, as a capability to achieve politically laid down goals. Determination of 'threats,' which the capabilities are required to meet, has to be done through a political process of decision-making.

money is supposed to buy in relation to likely needs of the future."2

Air Commodore Jasjit Singh gave as an analogy the story of the elephant and the blind men where the perception of each depends upon his peculiar location. This underlines the necessity of an integrated view of defence capability building, which would involve top level decision-making.

It is not possible to discuss about the required defence capabilities or 'right capabilities' in isolation from defence objectives, which have to be political decisions. Defence itself cannot be treated as an *objective*, as an end in itself, but can only be treated as a *means*, that is, as a *capability* to achieve politically laid down goals.³ Determination of 'threats,' which the capabilities are required to meet, has to be done through a political process of decision-making. Because of this, and as balance has to be struck among various capabilities to be developed, basic directions for defence capability building in the medium and long term, have to come from political decisions at the highest level. This is all the more necessary, as the decisions regarding modernisation cannot be delinked from: (a)

^{2.} Air Cmde Jasjit Singh, "The Budget and the Blind Men," The Indian Express, March 3, 2005.

Lawrence Freedman, "Strategic Defence in the Nuclear Age," Adelphi Paper, No. 221 (International Institute of Strategic Studies), Autum 1987, pp. 14-15.

Decisions regarding capability building and modernisation cannot be delinked from decisions regarding force structure and force level, as tradeoffs would be essential to provide adequate funds for modernisation in a defence budget. decisions regarding force structure and force level; (b) without long-term commitment of funding; and (c) the level of funding for each major area of capability building.

After making a bold attempt to lay down a security framework (as seen from the prime minister's speech quoted earlier), the government should, as a basic departure from past practice, come forward to take up these challenges and provide the necessary planning guidelines, so that the Service Headquarters can do the detailed

programming for capability building within these guidelines.

Decisions regarding capability building and modernisation cannot be delinked from decisions regarding force structure and force level, as tradeoffs would be essential to provide adequate funds for modernisation in a defence budget which in the above framework can henceforth only grow at a slow rate. Therefore, a fiscally constrained force planning exercise becomes an essential part of the programming and budgeting process.

None of these issues gets addressed through the defence budgeting process in India, which is totally delinked from the planning process, be it force planning or capability planning. It is basically an accountant's budget with an accent on control of expenditure and with no other goal. It cannot be otherwise, as no 'goalsetting' exercise or exercise towards meeting those goals efficiently and effectively has preceded the budgeting exercise. It is no wonder that a discussion on the defence budget begins and ends in talk of the aggregate amount allocated to defence in comparison to earlier years.

It is really a matter of surprise how we have succeeded in steering clear of all the reform movements in bringing about change in the budget system during the last five decades and clung steadfastly to our traditional input-oriented incremental budgeting. Not that sporadic attempts have not been made. Performance budgeting for defence was discussed in the mid-Seventies but rejected out of hand as the existing system was found to ensure "control of expenditure." Nobody asked the question of "control" for what "purpose" or whether the control through annual budgeting allocations can really control the expenditure, as "obligatory" expenditure on account of "strength and composition of the armed forces," which are policy level decisions and have long-term impacts on defence expenditure, came to dominate the scene. A halfhearted attempt was made to introduce zero-based budgeting in the late Eighties and was promptly given up, as the Service Headquarters did not come forward with feasible priority lists of schemes and projects. An attempt to introduce responsibility budgeting in the mid-Nineties ended only at delegating financial power to the operating levels, without laying down performance parameters or accountability for results. The question of accountability at the higher level for defence spending was not deliberated upon. So it is basically business as usual with routine input-based budgeting at an incremental mode, to avoid conflicts, and to provide funds for ongoing programmes.

Budgeting in India is yet to be viewed as a management tool for rational resource allocation decisions among competing needs involving hard choices. This conceptual change in viewing the role of budgeting is the first important change that is required if modernisation and capability building are to become our main goals in defence budgeting. Budgeting should be viewed as giving shape to national policy and national strategy.

In fact, the motivating force for the budget reform in defence in the mid-Fifties in the USA came from such a conceptual view of budgeting. As

Arthur Smithies wrote: "The need for program budgeting arises from the indissoluble connection between budgeting and formulating and conduct of national policy.

"Program budgeting involves the use of budgeting techniques that facilitate *explicit consideration* of the pursuit of *policy* Budgeting in India is yet to be viewed as a management tool for rational resource allocation decisions among competing needs involving hard choices.

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objectives, in brief, of their economic costs, both at the present time and in the future." 4

"Explicit consideration of pursuit of policy objectives" is the key element in programme budgeting. Elaborating further about the technique to be followed, which again is a key element in this process of budgeting, Arthur Smithies wrote,

To establish a link between policy and budgeting, it is necessary that planning and programming in defence should be highly centralised operations, carried out by flexible methods and capable of rapid revision. "Changes in external threats, technology, management techniques, and strategic doctrine all demand that programs should be subject to continual revision."⁵ To establish a link between policy and budgeting, it is necessary that planning and programming in defence should be highly centralised operations, carried out by flexible methods and capable of rapid revision. But "centralised operation cannot operate in a vacuum. Its success will depend heavily on the extent to which ideas and

experience at all levels of the Department can be fed into it."6

This brings us to the basic idea of this management and budgeting technique under programme budgeting. The aim is to bring about national allocation of resources, with management priorities determining the allocation through the exercise of choice after consideration of alternative means of achieving the management goals. Budgeting becomes the management's tool of decisionmaking in the vital field of resource allocation for defence. This calls for revision on the basis of feedback from the results of ongoing programmes, and the change in environment.

As Smithies writes: "Ideally the process of revision should be continuous and comprehensive. Every year should, in principle, be the first year of a new program." This is because programmes are interrelated, and revision of one

Arthur Smithies, "Conceptual Framework of Program Budget," in David Novicked., Program Budgeting. (Harvard University Press).

^{5.} Ibid., p. 45.

^{6.} Ibid.

element involves reconsideration of all others. This basic principle would be valid even when programmes are considered in a five-year framework, and planning and programming have to take place in a rolling mode; so has the budgeting, which has to reflect the programming decisions. Only in this way, that is, in a rolling mode, can a link between planning and budgeting be established. There is no other way.

Conventional budgeting with its 'inertia' is unable take up this challenge. This is basically a management challenge, and has to be taken up at all levels of management, as budgeting has to give shape to national policy and planned objectives through the p To make budgeting respond to the challenges posed by the requirements of capability building and modernisation, the programming process in the Service Headquarters has to be revitalised with concepts of detailed evaluation of ongoing programmes, feedback and revision of programmes.

policy and planned objectives through the programming device.

If capability building and modernisation are important goals of budgeting, then this 'inertia' has to be overcome, and a dynamic programming system has to be instituted in each Service Headquarters, so that budgeting as a responding device also becomes dynamic. The first year of the new five-year programme becomes the first year of the budget plan, with firm estimates, and the budget plan also becomes a rolling plan.

To make budgeting respond to the challenges posed by the requirements of capability building and modernisation, the programming process in the Service Headquarters has to be revitalised with concepts of detailed evaluation of ongoing programmes, feedback and revision of programmes, looking also for inputs from commanders in the field, all being made in the context of a long-term plan, which would be subject to annual review. This mode of developing programmes on a continuing basis would require a proper institutional set-up.

These programming aspects of the budgeting system, I shall, for convenience of exposition, call "micro aspects" of defence planning and budgeting, in

contrast to "macro aspects" of defence planning and budgeting which involve setting strategic objectives, decisions about broad capabilities to be built, and direction of modernisation efforts and financial commitments on a long-term basis for investment in various aspects of capability building.

"Macro-analysis" of capability building through the programming concept is an essential aspect of decision-making in a Service Headquarters for the following reasons:

- (i) It involves making final recommendations for resource allocation among various programmes out of the resources likely to be allocated to the Service and they have to satisfy themselves about the right balance among the various capabilities to be built.
- (ii) Costs of various weapon systems have to be studied along with their effectiveness. Programme budgeting, as Fredrick Mosher stated, "...called for system analysis, cost-benefit analysis, operational research and related techniques," in the context of attempts being made in the mid-Sixties to introduce programme budgeting in all departments of the federal government (because of its success in the US Department of Defence). These were not the weapons with the traditional budgeteer of 1965, who had typically been the product of general administrative training and experience supplemented by work in accounting. This new orientation was basically that of economics, and the planning, programming and budgeting system (PPBS) was in part a culmination of the swing toward economics that had begun with the Kennedy Administration in defence and, from the top down, in the Bureau of Budget.⁷
 - Traditional budgeteers in India still have a general administrative background with exposure to accounting. They are ill-equipped to usher in programme budgeting. The lead has to come from the Service Headquarters as for as programming aspects are concerned.
- (iii) There is a third important reason for attending to the "micro-aspects" of planning budgeting in the Service Headquarters which has an important

Fredrick C. Mosher, Joshep E. Harr, Programming Systems and Foreign Affairs Leadership: An Attempted Innovation (Oxford University Press, 1970), pp. 93-94.

bearing on optimum allocation of resources in defence. Robert McNamara summed up the position as follows:

In addition to the defence budget, as the one we have, we begin to encounter the law of diminishing returns, where each additional increment of resources applied produces a smaller increment of overall defence capability. While benefits cannot be measured with precision, careful cost/effectiveness analysis can greatly assist in the elimination of program proposals, which clearly contribute little military worth in relation to resource expenditure involved. We have applied the principle throughout our program and budget reviews.⁸

Application of these principles requires a lot of judgment and intuitive understanding of the core values of a Service, which need to be preserved. Hence, such studies are best done by each Service Headquarters, because precise measurement is not possible. The above also underlines the vital necessity of constant reviews of programmes and budget allocations, with a zero-based approach, as a part of the annual exercise towards budget formulation.

This brings out the central importance of evaluation studies which have to be institutionalised in each Service Headquarters and made an integral part of programming and budgeting.

The recommendations of the Group of Ministers (GoM) relating to reforms in budgeting emphasised this point when they recommended, in the context of formulation of the 10th Defence Plan, "...introduction of zero-based budgeting approach for all ongoing schemes may be undertaken in a time-bound manner."⁹

Has this been done? One really wonders as there is no mechanism instituted to make such studies nor have criteria or parameters been laid down for assessing the worth of ongoing programmes. While we are quite vocal about non-approval of the 10th Plan, we do not say anything about the zero-based approach which was to precede the formulation of the proposals.

The GoM stated very clearly: "Optimal utilisation of resources cannot be achieved unless greater emphasis and attention is given to the process of budget

^{8.} Quoted by W.W. Kantmann, The McNamara Revolution (1964), p. 188.

^{9.} Report of the Group of Ministers on National Security, February, 1991, paras 6.50 & 6.51.

Optimal utilisation of resources cannot be achieved unless greater emphasis and attention is given to the process of budget formulation and implementation, including forecasting, monitoring and control. formulation and implementation, including forecasting, monitoring and control. There is also a need for rigorous prioritisation and the order of the charge on the budget being established with reference to Plan objectives."¹⁰

Our budgeting continues to be in the same incremental mode, without any prioritisation exercise taking place; it is more of a statistical exercise than a reflection of the

decision-making process for national resource allocation for defence.

Being aware of the limitations of the existing system of budgeting, the GoM, recommended "budgetary classification to promote programme-based budgeting."¹¹

Unfortunately, they confined themselves only to the format of programme budgeting, ignoring other essential elements of programme budgeting, as mentioned above. Nor did they recommend anything about rationalising the budgeting process, in order to use it as a management tool. In this, their approach has been in the traditional mode that programme budgeting only relates to budgeting and can be introduced without bringing basic changes in the management attitudes and techniques.

Programme budgeting has many elements apart from the budget classification aspects. Most important of them is establishing a process of laying down objectives through the planning process, that is, the 'ends' aspect of policy-making and a mechanism of relating them to the 'means' i.e. the resources, so that budgeting becomes a means of translating the policy into resource allocation.

The other elements are:

(i) A budget organised in terms of categories that are closer to 'outputs' than traditional categories. But this will mean that close attention has to be given to defining the nature of outputs or the capabilities desired to be achieved.

^{10.} Ibid., para 6.51.

^{11.} Ibid., para 6.22.

Broad programme categories which were brought in when PPBS, for example, was introduced in US defence, would hardly be useful.

(ii) A programme budget implies a budget that employs a longer time horizon than is found in traditional budgeting with a horizon of one year. The reason is that with a longer time horizon, the full cost implications of alternation levies are less likely to be neglected.

This brings into focus the necessity of meticulous costing of programmes, including both the cost of acquisition and the operating cost. The cost of the entire capability package has to be assessed as well as its impact on annual budgets spreading over to several years in the future. From the technique point of view, proper costing is the most essential element of programme budgeting. We have still to institute any costing device in the Service Headquarters to make such calculations, without which national decisions cannot be taken.

- (iii) Extensive use of cost utility analysis of relating input to output. Utility analysis has necessarily to be done in the context of the objectives to be achieved and on the basis of establishment of criteria of effectiveness in achieving the objectives, keeping in view the law of diminishing returns, as mentioned above.
- (iv) Institutional reorganisation to bring relevant administration functions under the jurisdiction of the authority making the final programme decisions.

All the above are essential elements of programme budgeting. It is a package. Only attending to the budget classification will bring about a cosmetic change, but not programme budgeting in the real sense.

The main ingredient of a programme is the programming function. Under the PPBS model as adopted in US defence, the programming function allocates resources to requirements that achieve national security objectives established in the planning phase of PPBS. The programming function and related decisionmaking take place in the Service Headquarters.

It has now been realised that evaluation of existing programmes by establishing a proper institutional mechanism in the Service Headquarters,

The budget formulation process in Service Headquarters follows a bottom-up approach.

which would review the programme, provides the most important inputs to the programming process, with a specific study relating to the army by RAND indicating that there should be proper resource

guidance from the top across the army, which "is integral to the total resource programming and process." The same applies to the navy and air force. There must be "strategic planning guidance that provides army goals and objectives for the near -, mid-, and far term."¹²

The need has also been felt for a Vision Document to provide a Service Headquarters what its leadership wants, for example, the army, to look like in the next 15 to 20 years. These are the inputs from the top required for proper resource allocation in the Service Headquarters for budgeting purposes. So budgeting becomes both a top-down as also a bottom-up process.

What is our system?

The budget formulation process in the Service Headquarters follows a bottom-up approach. Explaining the process in the army, Maj General Bains says: "Budget follows a Bottom-Up Approach. Units/Establishments project their requirement of funds to Estimating Authorities who compile and forward the same to the Financial Planning (FP) Directorate. FP Directorate vets the demands, discusses these with representatives of Estimating Authorities where necessary and forwards the same to MoD (Finance). The consolidated estimates of the Services are sent to the MoF."¹³

In order to introduce the features of programme budgeting in a Service Headquarters, the budgeting process has to be both top-down and bottom-up; top-down in the shape of programming and financial guidance, emanating from the top leadership; bottom-up in the shape of evaluation studies of ongoing programmes, examination of alternatives, cost utility analyses and budget formulation on the basis of review of programmes.

^{12.} RAND, Anroyo Centre, "Improving the Army. Planning, Programming and Budgeting & Execution System (PPBES)," Leslie Lewis et al, "The Programming Phase" (1999), p. XVII.

Maj Gen Bains, ADGEP, Army HQ: "Budgeting and Financial Management in the Army," paper presented in a joint seminar on financial management at ASC Centre & College, Bangalore, August 2004.

In our existing process of budgeting, there is no stage of programming or programme reviews. There is no time for it as the budget gets formulated and finalised in a span of two and half months. Hence, the best one can do is to take the existing base as given and follow an incremental mode of budgeting to provide for increase in costs. Budgeting is not, and cannot, function in these circumstances as a decision-making device for exercising In our existing process of budgeting, there is no stage of programming or programme reviews. There is no time for it as the budget gets formulated and finalised in a span of two and half months.

choice in resource allocation decisions, whether it is for capability building or modernisation. Our budget is a control-oriented budget. The information and decision flow is from the bottom.

The process has to be reversed if the objective is to lay emphasis on modernisation and capability building as an important goal of budgeting. It has to be plan-oriented budgeting, a resource-constrained, long-term capability plan approved at the top decision-making level, which would the main driving force for budgeting. The 'planning' function has to predominate in this budgeting system, as opposed to the 'control' function, which is the basic feature of our input budgeting today. Control would flow from planning.

In the process of formulating the plan objectives into budget allocations, the programming function in each Service Headquarters would play the most crucial role. This point has not been adequately appreciated in our discussions on budgeting reforms.

Programming decisions have to go through an iterative process and have to take place on a continuous basis. Therefore, there has to be a proper institutional arrangement in each Service Headquarters for both planning and programming. This has to be designed properly. The recent RAND study on programming in Army Headquarters of the United States quoted earlier brings out the organisation aspects and the programming with suggestions for improvement. Service organisational elements are involved in the process in Army Headquarters. A key role is played by groups called Programme Evaluation Groups (PEGs), which evaluate ongoing programmes. The principal function of these groups is to allocate resources to areas and activities assigned to each of them. These include among others, manpower, general purpose forces, supply and maintenance, modernisation, military construction, housing, information management, base operations, intelligence, etc. There are 14 such PEGs. PEGs are organised by staff function, responsibility and major programmes. As would be seen, "modernisation" is one such function, for which there is a PEG. Whatever priorities are to given to this function compared to other functions, from the resources allocation point of view, can only come from the top. This cannot be left to the bottom-up exercise. Establishing *inter-se* priority is always a top level function.

Each PEG resource allocation iteration is reviewed by overseeing organisations such as the Programme Budget Committee (PBC), where membership is at the general officer and senior executive level. The PBC adjusts resource allocations to balance the broader programmes.

Between the PEG and PBC, there is the Council of Colonels (COC), which is an ad-hoc body representing all major headquarters staff functions that assist in preparation, execution, and review of programming functions.

The process identifies key resource issues in the context of resource requirements, which progresses through hierarchy. Only a few issues remain for decision by the army leadership.

The Director of Programme and Evaluation (DPA&E) guides the PEG and Director of the Army Budget (DAB).

Inputs from Major Commands (MACOMS) are essential inputs for resource allocation decisions.

The organisation set-up is depicted to bring home the point that the programming process requires proper institutional arrangements which function in an interactive mode (refer Fig. 1).

The planning process in the Army Headquarters starts with the senior army leadership approving The Army Plan (TAP) which provides specific objectives, programme priorities and guidance for programmes. "TAP emphasises an



iterative method of establishing requirements and providing guidance and priorities to PEG... for interpreting TAP guidance against requirements within their areas of responsibility."¹⁴

The RAND team was also asked to look into the programming phase and suggest a framework to make programming decisions more balanced and effective towards capabilities development. The team developed certain essential criteria for the proposed framework, which, I believe, is of unusual application, to make the programming function in a Service Headquarters more effective towards capability building.

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^{14.} RAND, Arroyo Centre, n. 12, pp. 6-7,

• *The framework has to be both top-down and bottom-up.*

The generation of a hierarchical set of options is inherent in the process. The options could be within each particular function, e.g. manning, training, recruiting, equipping, outfitting and repairing military equipment, constructing, maintaining, etc. "The leadership should also be presented with options that cut across resource areas: greater equipping versus reduction in manning; reductions in equipping versus greater technology investment, long-term research and development, etc."

- All the army's resources have to be considered within the capability packages. "For instance, the identification of the Patriot missile system as a defence against incoming Scud missiles has to include all the associated resources, including those needed for deployment and sustainment of the system......Such an approach eliminates the practice of resourcing within stovepipes (a single functional area) because all the resources associated with providing a capability have to be accounted for within a single package."¹⁵
- The framework also has to ensure that tradeoff analyses are performed in a disciplined and consistent manner. Inter-temporal issues are to be addressed within the tradeoffs.

The leadership should also be presented with options that cut across resource areas: greater equipping versus reduction in manning; reductions in equipping versus greater technology investment, long-term research and development, etc. • The framework has to accommodate the army's culture and enhance the army's case capability.

These parameters for programming are of universal application as they are derived from the philosophy of programme budgeting.

I have gone into details relating to establishing a framework for resource allocations decisions within a Service Headquarters, as in our discussion of budgetary reform in defence, we hardly pay

15. Ibid.





any attention to the programming aspect in a Service Headquarters, its required institutional framework for decision-making and the laying down of basic criteria for rational resource allocation decisions for capability building.

There is another aspect to the proposed framework for decision-making which cannot be ignored, that is, the planning and programming strategy has to be resource-constrained. This had been ignored in the earlier models of PPBS. The RAND study suggests a framework for conceptual overview, which I have adapted for presentation purposes (refer Fig. 2).

The army's strategic vision is the basis from which the army defines its objectives, requirements, and priorities (the central box), all of which are essential for a resource strategy for capability building and modernisation. Each Service Headquarters has to develop its own Vision Document.

When capability building and modernisation become the main goals of the resource allocation process, the decision-making process requires inputs from various sources and levels and, as explained above, it has to be an iterative process. The hierarchical model of decision-making has to be suitably modified to accommodate these challenges and innovative ideas. As already explained, the programming process has to be both top-down and bottom-up. When capability building and modernisation are the goals, it involves major organisational challenges and calls for a change in perspective.

We shall take two examples of modernisation to explain the point.

RMA

The revolution in military affairs (RMA), with dramatic advances in firepower, accuracy and ability to detect targets, which is now spreading alongwith globalisation of telecommunications and information technology (IT) provides challenges to the hierarchical approach. RMA is now considered a goal of modernisation in the Asian region. As Paul Dibb in an important article stated: "Any assessment of RMA in Asia must be tentative.....But the RMA challenges conventional hierarchical approaches to military structures; it requires close attention to unexisting subjects [Integrated Logistic Support (ILS) and joint force doctrine], as well as to innovation and lateral thinking."¹⁶

Even to take partial 'advantage' of RMA, substantial changes have to be made in such areas as doctrine and organisation, maintenance philosophies and attitude towards innovation. The attention has to be diverted from a question of platforms to that of defence systems.

The RMA concept of modernisation brings out the critical importance of a new approach to maintenance and support in combat of weapon systems. Even to take partial 'advantage' of RMA, substantial changes have to be made in such areas as doctrine and organisation, maintenance philosophies and attitude towards innovation¹⁷. The attention has to be diverted from a question of platforms to that of defence systems. The systems integration skill becomes the most important skill which is in short supply. In the context of introduction of RMA, emphasising only

Paul Dibb, "The Revolution in Military Affairs and Asian Security," Survival, vol. 39, no.4, Winter 1997-98.
Ibid.

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capital expenditure for acquisition of hi-tech equipment would not help. Modernisation is a multi-dimensional concept. It is also to be recognised that the "system of systems" has limited applicability to low-intensity conflict.

It may be more appropriate to go in for partial or hybrid RMA, and each country has to have its own version of hybridisation, depending on its circumstances and specific needs. This also calls for an innovative approach to RMA, which the hierarchical mode of functioning may not always help in fostering.

But even the partial version of RMA would take a long time to introduce and would cost a great deal. It would require economies in other directions for which hard choices have to be made. The version of RMA that would require to be introduced would call for indepth deliberations, and the results brought out in a White Paper after policy decisions have been taken in this regard at the highest level. The White Paper should include long-term financial commitment for various components of RMA and also the economies that would be effected in other directions.

NETWORK-CENTRIC CAPABILITY

Similar points come out when we consider the network-centric capability which is now being advocated by the army as its thrust towards modernisation. Network-enabled capability (NEC) also underlines the point that the concept of modernisation and that of capability building cannot be segregated. Capability

building is the generic concept, and modernisation, meaning acquisition of hitech equipment, is one part of it.

NEC involves coherent integration of sensors, decision-makers and weapon systems along with support capabilities. The aim is to bring to bear the 'right military capability' at the right time to achieve the desired military effect. A UK defence document on "Future Military Capability" indicates that NEC will be at the heart of the NEC involves coherent integration of sensors, decision-makers and weapon systems along with support capabilities. The aim is to bring to bear the 'right military capability' at the right time to achieve the desired military effect. transformation process for enhanced military capability. It states: "This enhanced capability is more than about equipment; we will exploit the benefits to be obtained from transformed doctrine and training and optimised command and control structure."¹⁸

The NEC involves multi-dimensional changes, which have to evolve over time, and cannot be reduced to just acquisition of equipment. One cannot acquire NEC off-the-shelf. The technology and understanding of NEC is still evolving. The above-quoted UK defence paper indicating the strategy of acquiring NEC capability states: "We have a defined clear set of priorities to deliver NEC over three inter-connected phases which will improve the connectivity of current planned equipment, further integrate the organisations and systems, then synchronise all aspects of military effect."¹⁹

Perceptive defence analysts also add a word of caution. Overreliance on the NEC for modernisation has a danger of technology trying to dominate strategy. The doctrine of NEC underestimates the human character of information and overestimates the human ability to deal with contradictory information. It underestimates the enemy. If the enemy is militarily weak, it will choose to fight asymmetrically.²⁰ The enemy may be further away from the traditional battlefield and choose to exploit the vulnerabilities of a nation. While the traditional battlefield is highly capital-intensive, irregular warfare, which the enemy may make us fight, is labour-intensive.

The "relevant capabilities" which are required to be acquired would require indepth deliberations and decisions in this regard would have to come from the government, keeping in view the operational requirements in the future.

From the budgetary point of view, acquiring the kind of capabilities mentioned above requires a government-approved plan of "long-term investment for capability building" with steady investment over a ten-year period. The long term is necessary to allow the concepts and understanding of the use of these

19. Ibid

UK, Ministry of Defence, Defence Command Paper, Cm 6269, Delivering Security in a Changing World, Chapter 2. www.mod.uk/issues/security/cm6269/chapter 2.htm

^{20.} Maj Gen. (Retd) Robert Scales, "Transformation," Armed Forces Journal, March 2005.

technologies to evolve and to allow the systems to be developed with R&D support and get ready for induction, as a part of the interaction process of decision-making. Defence capability and modernisation be treated "returns should as on investments." Investment decisions, particularly long-term investments requiring investment of billion of rupees, require detailed cost and effectiveness analyses by professionals trained to do such analyses. It would also involve tradeoff analyses and

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economies likely to be achieved in other directions, followed by hard choices, keeping in view various imponderables. It would also involve careful assessment of availability of resources for such long-term investment.

Once such a long-term investment plan is in position, the annual budget could evolve round it. Such a plan would require to be reviewed every three to four years taking into account new challenges and opportunities, and correcting earlier mistakes about assumptions made.

Such an investment plan would require macro- level analyses. It would take into account trends in the balance of power and the Indian position in the equation (a political analysis), assessment of the evolving threat scenario (a political and military assessment), trends in GDP growth (an economic analysis), securing energy security (an analysis from the department dealing with energy); technology trends (an R&D assessment, including inputs from private sectors), doctrinal development (a military input), assessment of existing military capability and its deficiencies (a military assessment).

Therefore, institution of a long-term investment plan would be dependent on a comprehensive defence review, including all the aspects mentioned above. How to measure the return on these investments? This is not an easy question to answer, as it is not easy to come to an agreement on what should be defined as "return on investment" or how it should be measured. The Congressional Budget Office (CBO) of the USA which got concerned with the question in the mid-Eighties, attempted to find answers to these questions by following two "ingenious methods." As William Kaufmann stated, "First, in determining what constitutes return on investment, the office looks at what the three military services regard as four main determinants of defence capability: forces structure, modernisation, readiness and sustainability."²¹

Two points come out from the above approach:

- 1. Modernisation has to be viewed as an integral part of military capability building, as we have stressed above.
- 2. Military capability building and the investment required for it cannot just be confined to the capital expenditure portion of the defence budget, as expenditure for force structure, readiness and sustainability has large components of what we term as "revenue" expenditure. A long-term capability building plan should have components of both types of expenditure, so that the annual budget can evolve out of it.

Military capability building and the investment required for it cannot just be confined to the capital expenditure portion of the defence budget, as expenditure for force structure, readiness and sustainability has large components of what we term as "revenue" expenditure. The second approach in measuring the return on investment adopted by the CBO was adoption of a comparative method. In following this approach, they compared the period under the Reagan Administration with the period under the Carter Administration.

The comparative methodology, as Kaufmann points out, provided several insights. It was found that only a little more was added to the force structure in the first term of the Reagan Administration, compared to the period under the Carter Administration. But what about "modernisation" with the former's penchant for spending on hi-tech equipment?

21. William W. Kaufmann, A Reasonable Defense (The Brookings Institution, USA, 1986) p. 41.

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The findings of the CBO about modernisation were more detailed. For example, it was found that under the first term of the Reagan Administration, 6.4 per cent more missiles were funded than in the earlier Administration but 91.2 per cent more was paid in constant dollars; 8.8 per

Personnel costs rise by about 12 per cent per annum in nominal terms. Typically, equipment costs rise by 10 per cent per annum in real terms.

cent more aircraft were funded (fixed wing and rotary), but they cost 75.4 per cent more; 30 per cent more tanks and combat vehicles were procured, but 147.4 per cent more was paid for them.²²

The conclusion that was arrived at by this comparative method was that defence in the mid-Eighties was getting a much lower rate of return on investment, than the period prior to 1981.

In the quest for modernisation, only going in for high-tech equipment will not ensure a proper rate of return on investment. Both the costs and effectiveness of weapon systems have to be considered together.

These are basically problems of defence economics. The defence economics problems arise because the defence budget in real terms might rise only slightly. But such budgets are faced with rising input costs of both equipment and personnel.

Personnel costs rise by about 12 per cent per annum in nominal terms. Typically, equipment costs rise by 10 per cent per annum in real terms which

means doubling of equipment costs every 7.25 years; such increase exceeds the increase in defence budgets. As a result, defence policy-makers are continuously confronted with the need to make difficult choices between equipment and personnel and between each of the armed forces. The practice of annual budgeting which fosters the strategy of the camel's nose under the tent as a major decision-making strategy,

The practice of annual budgeting which fosters the strategy of the camel's nose under the tent as a major decision-making strategy, makes the problem of choice more difficult, for most of the expenditure gets precommitted.

22. Ibid

makes the problem of choice more difficult, for most of the expenditure gets precommitted. Budget increases go mainly to meet existing commitments, leaving very little scope for undertaking all embracing modernisation like that of RMA and NEC which involve a lot of investment. In such a situation, modernisation is bound to suffer.

Faced with these difficult choices, the government can make basically two kinds of responses. The first is the "fudge it" option with "equal misery" for all the armed forces,²³ reflected in less training, delays in new orders in buying replacement

A defence review allows basic strategic questions to be raised regarding force structure planning and capability building. It requires inputs from defence experts, analysts, political scientists, and academicians concerned with policy studies. The plan for modernisation must form part of such a review. equipment, ammunition and spares, and a truncated modernisation programme. The overall result of such a policy is reduced military capability of the armed forces.

The second option that the government can resort to is a major review of ongoing programmes, existing force structure, challenges and opportunities. The USA followed this approach in 1997 by its Quadrennial Defence Review (QDR) and the UK adopted this policy in 1998 through its Strategic Defence Review(SDR). The aim was to put together a long-term capability plan, looking at various options for economy. The current UK defence policy is

based on the SDR of 1998 which was subsequently updated. Holding of the QDR every four year is now mandated by law in the USA and provides the strategic planning guidance for programming and budget-making. QDR is now an integral part of the budgeting system in the Defence Department of the USA.

Such a defence review allows basic strategic questions to be raised regarding force structure planning and capability building. It requires inputs from defence experts, analysts, political scientists, and academicians concerned with policy studies. The plan for modernisation must form part of such a review. It should

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^{23.} See Prof Keith Hartley, UK Defence Policy: An Economist's Perspective (Centre of Defence Economics, University of York, England, 1999).

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help in developing a long-term investment plan for military capability building as a part of the strategic planning process.

Questions about "where we are," "where we want to go" and "what route to follow" are the basic ones, which are to be answered by strategic planning; they are an essential part of a strategic defence review. Such a review should be immediately undertaken in India, with the aim of developing a long-term investment plan for capability building. For transparency, these decisions should be brought out in a defence White Paper.

I shall, in this context, give the instance of Australia which also conducted defence reviews in the 1990s and subsequently developed long-term investment plans. Released in December 2000, the defence White Paper of Australia set the government's long-term direction and capability enhancement framework for defence. In February 2003, in line with the government pledge to review Australia's defence periodically, the Ministry for Defence released Australia's National Security Defence Update 2003, which took into account the changed strategic environment.²⁴

The Defence Department funding in 2002-03 and beyond was based primarily on the allocation approved by the government in the context of the defence White Paper. This funding totalled \$23.5 billion in 2000-01prices (total \$27.3 billion in 2003-04 prices) over ten years, commencing 2001-02, and represented the most specific long-term funding commitment for defence. *This represented additional funding over the existing base*.

The additional While Paper funding was to be applied to:

- A defence capability plan containing a programme of capital investment over the ten-year period in addition to the investment programme already planned.
- Provision for operating costs of the capability enhancement in the defence capability plan.
- Provision of 2 per cent real per capital growth in personnel costs from 2004-05 onwards, reflecting more accurately the price of maintaining a highly skilled workforce in sustainable work.

Defence Annual Report of Australia 2002-03, Implementing the White Paper on Defence. www.gov.au/budget/02-03/dar/01_02_1/whitepaper.

 Resolution of base line cost pressures, including some cost pressures through administration savings initiatives.

Of the total additional funding of \$23.5 billion allocated in the White Paper, some \$16.4 billion was earmarked for unapproved capital investment. The major capital investment programme consists of capital equipment and capital support facilities. The provision of \$4.6 billion for 2 per cent real growth in presumed costs has been programmed in the defence forward estimates commencing in 2004-05 for the purpose intended in the White Paper.

There is provision for additional operating costs, which are estimated at \$2.8 billion over the decade. The funding is to ensure that sufficient operating costs are available to operate the equipment on delivery. US \$967 million was included in the White Paper to meet the unavoidable cost pressures in operation costs identified in it.

The provision for these additional costs have been made year-wise, so that the annual budget can be prepared on that basis. These underline the importance of meticulous costing of various elements of the defence programme to enable putting together a long-term investment plan. Long-term costing and long-term planning in defence are co-terminous. Budgeting for modernisation is not possible without instituting the long-term costing system in defence.

Of course, the rationality of additional investment would be based on the fact that decisions regarding base line forces have already been arrived at on the basis of defence reviews. It we have to undertake such a review, it should bring out what changes are to be brought about in the force structure as also the additional investment required during the next 10 years, not only for capital equipment, but also for personnel and operational costs.

The existing force structure and force level have to be reviewed through a zerobased approach, to arrive at a rational force structure. It should not be forgotten that before the QDR was undertaken in 1997 in the USA, the force structure was reviewed and rationalised through the Base Force Review and Bottom-up Review. Similar reviews were undertaken in the UK prior to undertaking the SDR in 1998. Similar reviews were carried out in Australia. The lesson is clear: it is not possible to get approval for a long-term investment plan without going into the rationality of the existing force structure and force level. Economies in expenditure made through such reviews should be made available for long-term capability building, including modernisation. The lesson is clear: it is not possible to get approval for a long-term investment plan without going into the rationality of the existing force structure and force level.

The necessity of a defence review involving review of all the above aspects cannot be postponed any longer. In the USA, the strategy that currently informs the allocation of defence resources is the QDR, which is undertaken every four years. "As it (QDR) serves as a blueprint for resources allocation, it is extremely important to 'get the strategy right.' Within the framework of QDR, both the questions, 'How much is enough?' and 'How wisely are we investing for modernisation?' are to be addressed.

"A central objective of the review was to shift the basis of defence planning from the 'threat-based' model that has dominated the thinking in the past to the capability-based model for the future."²⁵

When the QDR was made in 1997, the assumption was that a relatively flat defence budget would be added to meet the requirements. But by Fiscal Year (FY) 1999, the plan was announced to add \$112 billion to the defence budget in the next six years.²⁶ This became necessary mainly on account of higher operational and maintenance costs and higher personnel costs that were anticipated in the QDR, 1997.

It is no wonder that in FY 2000 the logistics strategic plan was developed. This underlines the importance of strategic planning for defence logistics and its modernisation. Along with the modernisation drive for purchase of equipment and weapon systems, modernisation of logistics has also to proceed in parallel. How the logistics superstructure can be streamlined and rationalised on inter-Service basis to achieve economy and efficiency in the logistics support system is yet to be attended to by us.

^{25.} Quadrennial Defence Review Report, September 2001, US Department of Defence.

²⁶ Testimony before the House Budget Committee by Andrew Krepinevich, 1999.

From the budgetary point of view, unless the cost of logistics support can be kept within predicted limits, it would eat into the funds for modernisation for the purchase of weapons and equipment.

CONCLUSION

All we have tried to establish is that from the budgetary point of view, for modernisation and capabilities building purposes, we have to have a long-term investment plan based on a comprehensive defence review. We also require long-term costing of programme elements.

Instituting a multi-year budgeting system is not a must, though it would help.

We require government commitment for long-term investment and its distribution for specific aspects of defence capability building, in all its three aspects, viz. investment in equipment, additional costs on account of operation and maintenance, and additional personnel costs. But we require government commitment for long-term investment and its distribution for specific aspects of defence capability building, in all its three aspects, viz. investment in equipment, additional costs on account of operation and maintenance, and additional personnel costs.

Budget reform for sustained modernisation can come through:

(i) establishing a long-term investment plan for capability building, as the basis of a comprehensive defence review system to be instituted by the government, for rational

allocation of resources by exercising choice at the macro level of decision-making; (ii) instituting a long-term costing system for programme elements to help in long-term planning and budgeting;

(iii) instituting a resource-constrained programming system in each of the Service Headquarters, as a part of the programme budgeting system to translate broad policy directions into specific programmes; and

(iv) instituting a programme evaluation system of ongoing programmes in each Service Headquarters as a part of the decision-making in resource allocation and budgeting.