Response to the Evaluation of the Major Facilities Access Program

I. Background Information

The Major Facilities Access (MFA) program was replaced by the Major Resources Support (MRS) program in spring 2006. The span of the new program has been expanded to include support of major thematic and theoretical academic research resources (e.g., institutes) besides major experimental research facilities. Previously, only major experimental facilities were supported. Moreover, the selection criteria were reviewed and expanded, and most of the factors to be considered for each criterion were amended. Furthermore, the various eligibility criteria (costs, applicants) were thoroughly addressed for the two types of resources, experimental and thematic. The MRS program also formalized the support to consortia of Canadian researchers who need to access major resources located abroad and whose equivalent is not available in Canada. This type of support was informally provided through the MFA program. For resources receiving an average support of $500K or more per year, it is now necessary to provide NSERC with an annual report that summarizes the performance of the resource. The first competition of the MRS program was held in March 2007.

The establishment and implementation of the MRS program were carried out at the time of the joint RTI-MFA evaluation. We were thus able to take into account the preliminary findings of this evaluation through several meetings with representatives of the consulting firm that carried it out.

II. Answers to the Recommendations of the MFA Evaluation

Recommendation 4

Restate MFA objectives in terms of results instead of activities and adjust reporting requirements accordingly.

Answer

If the overall objectives of the MRS program were restated with respect to those of the MFA program, we did not focus on the outcomes but rather on the *raisons d'être* of the program. Ultimately, all of NSERC's programs aim at enhancing discovery, enabling innovation, and supporting the training of the next generation of highly qualified people (HQP), with excellence as an underlying principle and requirement. Each program targets one or several facets of the complex structure that supports Canadian academic researchers (student support, operations, equipment, technology transfer, etc.). For each program, the objectives clearly identify the targeted facet(s).

With respect to the expected outcomes of the MRS program, they are clearly articulated in the selection criteria. The program description clearly states that to be considered for

support, a resource must meet all assessment criteria, which include factors such as the impact of the resource on the advancement of the research programs of current and projected users, the impact of the resource on the dissemination and use of the generated knowledge in the supported area(s) of research, the scientific (knowledge and technology) return on the investment in the resource, the extent and excellence of HQP training, and the merit of the research programs that rely on access to the resource. Moreover, for resources that receive a support averaging $500K or more per year, it is now required to provide NSERC with an annual progress report. The report is due by February 1, and it may be provided to current or past members of the MRS Grant Selection Committee for assessment.

With respect to the program's impact on the Canadian academic research community, it will be continuously monitored through NSERC's newly implemented Result-based Management and Accountability Framework (RMAF). Various performance areas will be assessed as part of this framework, and numerous indicators will be measured for this purpose. The recurring assessment period is set to four years.

Recommendation 5

Augment funding for operations and maintenance expenses.

Answer

As for its predecessor in the last few years, and several other programs at NSERC, the MRS program faces an important funding pressure that relates to the large investments made by the federal government in support of science and technology since the beginning of this decade. Over the years, NSERC has provided increased support in agreement with its priorities, and within the budgetary constraints it faces. The evolution of the overall MFA/MRS envelope over five years is given in Table 1. Table 2 provides a summary of the total requested amount for Year 1 since the 2004 competition, as well as the available competition budget (i.e., envelope minus on-going commitments).

At its launch (spring of 2006), and prior to its first competition, $1 million in new funds was injected to the budget of the MRS program. Out of this amount, $64K were allocated to the subatomic physics Grant Selection Committee (GSC-19) since the latter oversees the assessment of MRS applications in that field. Moreover, $1 million was added to the MRS budget as part of the support provided to *Compute Canada*, in conjunction with the award made by the Canada Foundation for Innovation (CFI) to this national network of high performance computing (winter of 2006). Furthermore, several institutes were previously supported through the discipline-based reallocations exercise. When applying to the MRS program to renew their grants, their previous funding is transferred to the MRS program. This was the case in fiscal year 2007-08, and it is also the case for fiscal year 2008-09.

Fiscal Year	Envelope (million)
2004-05	$16.7
2005-06	$17.1
2006-07	$17.1
2007-08	$19.8*
2008-09	$22.9*

Table 1: Evolution of the budget allocated to the MFA/MRS program

(*) This amount excludes the *ad hoc* support to two major international initiatives - $3.9M in FY2007-08 and $2M in FY2008-09.

Fiscal Year	Requested for year 1	Competition Budget
2004-05	$8,702,102	$3,539,429
2005-06	$11,303,550	$4,731,767
2006-07	$15,235,560	$4,226,495
2007-08	$18,302,197*	$5,139,080
2008-09	$19,562,483**	$7,230,893***

Table 2: Funding requested for year 1 and competition budget since fiscal year 2004-05.

(*) The amount is that requested for FY 2007-08. It does not include the requests from three major institutes that were reviewed during the 2007 competition while their funding starts in FY 2008-09.

(**) The amount includes the request for FY 2008-09 from the three major institutes that were reviewed during the 2007 competition. It excludes a request of about $9M by a major international initiative whose assessment was carried out through an ad hoc mechanism.

(***) The amount includes the $3.5M award made to the three major institutes during the 2007 competition.

Recommendation 6

Coordinate with CFI to avoid under-investments in operating and maintenance.

In the discussion that precedes this recommendation, it is stated that "Current MFA evaluation criteria do not accommodate facilities initially funded by CFI, which may not fit the criteria of national or regional stature but have run out of operating and maintenance funding. Whether MFA should make room for these facilities is an open question."

Answer

The MFA evaluation criteria did not discriminate against any resource on the basis of the source of capital/infrastructure funding. The selection criteria were equitably and universally applied to all applications, and funding was awarded to the most meritorious

proposals, as permitted by the available funds. Similarly, the MRS program does not discriminate between resources on the basis of the source of original funding. All resources in the Natural Sciences and Engineering (NSE) are impartially reviewed. The requirement to demonstrate the regional, national, or international nature of the resource applies to all NSE resources that apply to the MRS program, regardless of the source of funding that supported part or the entirety of their infrastructure's establishment.

Many of the resources that are currently supported by MFA (on-going commitments) or MRS grants have received funding, at various levels, from the CFI; several resources have been entirely established through CFI funding.

Whenever possible, NSERC works closely with the CFI to coordinate our efforts. A prominent example of such concerted efforts is the combined support provided to *Compute Canada*. In 2006, CFI and NSERC jointly funded *Compute Canada* at the level of $88 million; NSERC's share amounts to $10 million over five years to support the operating costs. Moreover, in the fall of 2007, NSERC initiated, in close collaboration with the CFI and other funding partners, a process to provide a one-time interim and exceptional financial support towards the operating costs of two key major international initiatives. Without support for the two initiatives, Canada's investments and international leadership in significant scientific endeavours would have been jeopardized. The interim support is for fiscal years 2007-08 and 2008-09, and NSERC's share ($7.2M) is based on an *equal* partnership with the CFI and the initiatives' universities and provinces.

Recommendation 7

The NSERC Council should revisit its decision to fund O&M costs for national and regional research infrastructures only. If a decision is made to maintain the current emphasis on regional/national resources, the definitions of uniqueness and of what constitutes a regional/national resource should be clarified.

Answer

The support provided by NSERC towards the operating costs of academic research resources has evolved over the years. Several reasons led to the decision of focusing the support on regional, national or international (located in Canada) resources. CFI's extensive investments have led to an unprecedented expansion of the number of research equipment in the laboratories of Canadian universities, resulting in the fact that many instruments and infrastructures that were considered *unique* a decade ago are now commonly found in almost all institutions. As stated in the description of the MFA and MRS programs, the grants are intended to support resources that are not customary in a discipline or commonly available in Canadian universities. Support to the operation of equipment that is solely used by an individual or a small group of researchers at a given department or university could be made through NSERC's Discovery Grants or departmental and institutional funds. Moreover, one of the objectives of the MFA (now MRS) program is to enable and promote the development of resources that are effectively

used by a broad base of researchers from several institutions. Such an “open-access” philosophy has several important benefits, such as (i) the availability of research equipment to a large number of scientists; (ii) the development of synergies and collaborations; and, (iii) the efficient and extensive use of publicly-funded equipment. Taking into account the fact that the budget of the MRS program is constrained, such a focused approach is crucial to the success of the program.

The definition of a resource’s uniqueness has been clarified when the MRS program was developed and implemented. Several factors are listed in the program’s description to address this point. In particular, the regional nature of a resource was articulated as “directly tied to the size and diversity of the user base from outside the host institution, without restrictive geographical boundaries.” Other factors also link the uniqueness to a comparison to other Canadian resources that may be providing similar services, or to a significant use of the resource by a sufficiently large number of users from outside the host institution. NSERC deliberately chose not to be prescriptive and restrictive in its definition of the uniqueness criterion (such as, for example, putting geographical boundaries to what constitutes a regional resource), allowing the applicants to demonstrate the uniqueness nature of the resources in their proposals (e.g., demonstrating that the resource is used by a sufficiently large number of users from outside the host institution).