

Thoughts on the Performance Evaluation of NSFC

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Along with the development of China's government performance management and budget reform, and also to further improve the management of NSFC, performance evaluation of NSFC is necessary. This test introduces the NSF performance assessment system, and gives some thoughts about further development of the performance evaluation of NSFC (National Natural Science Foundation of China).

Key words NSFC; Performance Evaluation; Government Performance Reform; Performance Budgeting

1 Demand analysis of performance evaluation of NSFC

1.1 Performance management reform of Chinese government

Now China is facing the transformation from the planned to the market economic system, and the pattern and performance of the government management will impact the social economic development deeply. As the economic reform goes further and further, the position and role of the government management reform will become more prominent, and the public will also be more concerned about the ability of the government management and the quality of the service offered by the government. The traditional inefficient mode of administration will be seriously challenged and the new performance oriented public management system will be inevitably established.

At present, the Chinese government departments at all levels are in the process of changing functions, and the establishment of a uncorrupted, efficient, open and transparent service-oriented government is the main direction. Bloated bodies, high administrative cost, low work efficiency, low satisfaction by the public and so on, are very common problems. To introduce a results-oriented performance management, assess the performance of the provision

of public goods and public services and link this to its budget for next year will compel government agencies to improve their service quality and work efficiency. Along with the further reform of the political system, the concept of "democracy" and "law" has become more and more familiar with the public. Thus, accordingly, the government must change the concept of "official position" and make meeting the public demand the final aim. The introduction of government performance management and performance assessment represents that the Chinese government has followed this trend, and accepted the supervision from the public. It also demonstrates the government's determination to improve the administrative effectiveness and enhance the administrative efficiency.

Currently, the government performance assessment has become a new trend of the government work all over the world, which gradually reflects the main features that the performance evaluation should be systemic, legal, and people-oriented. Strengthening the performance management and performance assessment is the trend of the world and the pressing need of social development in China, which is also necessary for the Chinese government to transform its functions, build a service-oriented government and carry out the scientific outlook on development.

As an important government institution of funding basic research, NSFC is a key link in the national strategy of building an innovation-oriented country. We believe that the performance assessment of NSFC is not only a part of government reform, but also the "vanguard" to conform and guide our government performance management and performance assessment. Surely it will be a good model to other departments. Moreover, the performance assessment of NSFC can display the results of the state-supported scientific research to the public, raise public attention and support for the science research, effectively promote the development of China's scientific research and accelerate the building of a country based on innovation.

1.2 China's budget reform

In order to adapt to the socialistic market economic development and the establishment of the system of public finance, Chinese government has decided to deepen the reform of the budget management system. Governed by public finance, aimed at the equal use of the public service, to the point of canonical, safe and effective distribution and use of the financial funds, our government has established a basic system of budget administration which fit the public finance and restricts the budget arrangement and performance. Following the principles of openness, integrity, being scientific, probity and effectiveness, by the way of the departmental budgets, a centralized income and expense system, the government procurement system and so on, the government has achieved a lot, especially to the point of establishing a modern budget reform.

But, there are still some deep-rooted problems that haven't been solved in the current system. The efficiency and effectiveness of public expenditure have not been fundamentally improved, and the current reform is still only controlling the input of the budget funding, not relating to the budget expenditure performance, and uneconomic use of financial funds (even a waste of it), which are still commonplace in our country. How to introduce and establish a sound performance budget management system, and change "input-oriented" into "effectiveness-oriented" to improve scientific budgeting and the evaluation of the use of budgetary funds have become the focus of the next reform.

Performance Budgeting is a result-oriented budget according to the government's various functions, making its activity performance aims and making the budget base on a measurable performance. By doing this, people can conduct a cost-benefit analysis by the scientific evaluation system. The most important function lies in that it makes annual input and output, i. e. performance, together. Because it focuses on the cost effectiveness, this year's performance will affect next year's budget. Every department needs to make scientific targets and find ways to reach those targets in accordance with its missions and then calculate the amount of funding, to avoid waste and improve financial efficiency in the use of resources. Every department must be responsible for these funds. The essence of performance budget lies in linking the allocation of budgetary resources to the performance of government departments, thereby improving the financial expenditure scientifically and normatively.

Compared with the implementation of Performance Budgeting in developed countries, China now does not have all the conditions to fully implement performance budget, and thus going through the transition step by step would be a favorable way. China should seize the opportunity that the department budget has been carried out, and promote the implementation of Performance Budgeting actively. Under the prevailing conditions, it is possible to select some district and departments as pilot units in specific areas. What we need to do is to actively learn experience and improve the system so as to continue the exploration before practical actions.

In the 1990s, some divisions in NSFC have actively explored some assessments about projects, and got some favorable results, which made performance concept take root in the soil of NSFC. NSFC has high-degree justness and credibility in the scientific community, and after 20 years' development, it has formed a relatively sound system of management and also has a fairly high management level. We hold the opinion that NSFC could be selected as a pilot department of our country's Performance Budgeting. We shall evaluate the performance of NSFC, and then gradually expand to other departments. According to the strategic goals of NSFC in building an innovation-oriented country, we can develop an annual work plan, and refine the plan for the annual performance indicators (including performance objectives and quantitative indicators), which can help link the specific work with the state's overall development plan and its own strategic planning. In this process, we can also promote the long-term rolling budget implementation. Each year we develop performance plan first and relate it to the department budget. At the end of the year, we will make a performance evaluation report, and adjust the next year's budget depending on the report, to give more fund or reduce it.

1.3 Improving the management of NSFC

There are two intentions for the governments in other countries to evaluate the government performance: the first is "to prove", which is based on the evidence gathered to judge the performance of the government agencies and demonstrate whether the agencies operates effectively or not; the second is "to improve", which stresses on the understanding of the advantages and disadvantages of organizations in the assessment process, giving opinions and suggestions to improve the development of the organization in the

future. But the evaluation to the government agency should concentrate on the reason why we improve the development. As the famous American assessment scholar Stufflebeam said: "The purpose of the assessment is not to prove anything, but to search for improvement." But now, many of the current government agency assessments seem to be biased towards "proving something", rather than aiming at the weaknesses of assessment objects, actively supporting its improvement, and ultimately achieving the targets. Performance assessment of NSFC is not only to show the scientific achievements over the past years. Actually, the most important thing is that through the feedback of the performance assessment results, we can promote NSFC management and improve the level of decision-making and scientific research.

In the micro aspect, through performance assessment of NSFC, we can find some common problems in the implementations of projects, so it helps to choose some good projects and improve the level of decision-making. The assessment can also bring more competitions among researchers and by this way we can find some outstanding research talents. For the managers of NSFC themselves, this is also a process to understand the latest scientific research and promote their study. In the macroscopic aspect, the assessment can find some new growth disciplines and innovative research areas, which is beneficial to the selection of the areas to which priority can be given and the key projects to promote. Through such assessment, we can grasp the overall performance of NSFC, and adjust its direction to keep its planning consistent with the national goals. Moreover, it is conducive to display achievements of NSFC to the public, gaining more understanding and support from the public.

2 The performance assessment system of NSF

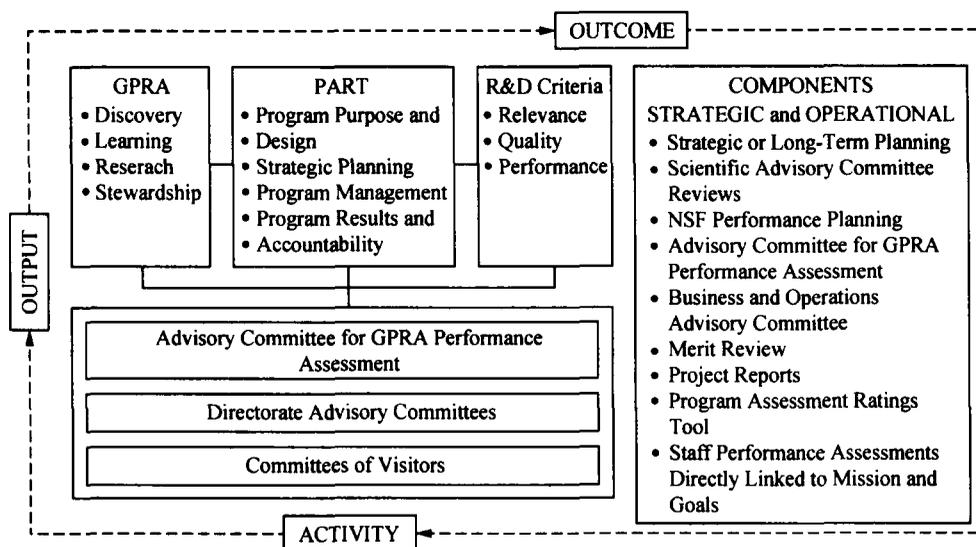
After Clinton took office in 1993, the US government began a large-scale reform—"Reinventing government movement", and set up a National Performance Evaluation Committee (NPR). In 1993 the United States Congress passed the "Government Performance and Results Act" (GPRA). According to the characteristics of scientific research, the United States scientific community and funding agencies had a huge argument about whether the GPRA bill should be used in scientific research. The United States Congress and the White House pointed out that the implementation of the bill could have some flexibility

in science research and the annual performance evaluation report of the basic research institutes could make some special provisions after they realized the specialties of basic research.

NSF's leadership in advancing the frontiers of science and engineering research and education is demonstrated, in part, through internal and external performance assessments. The results of performance assessment process ("from bottom to top") provide stakeholders and the American taxpayers with vital information about the return on investments. For example, in FY 2006, performance assessment at NSF was guided by the Government Performance and Results Act of 1993 (GPRA), OMB's Performance Assessment Rating Tool (PART), and NSF's FY 2003—2008 Strategic Plan.

OMB's approval of an alternative format for NSF performance assessment allowed NSF to develop a multilayer assessment approach, integrating quantitative metrics and qualitative reviews. Concretely, there are four layers in NSF's performance assessment process:

- (1) Agency-wide assessment. NSB, White House and Congress are charged with the agency-wide assessment by linking the budgets with performance results.
- (2) Directorate/Office-level Assessment Each directorate and office has an Advisory Committee that meets twice a year to provide guidance on priorities, address program effectiveness, and review Committee of Visitor (COV) reports and NSF programs' responses to COV recommendations. Advisory Committees are chartered and hence subject to Federal Advisory Committee Act rules;
- (3) Program-level Assessment NSF's Committees of Visitors (COV) provide program assessments that are used both in program management and in annual GPRA reporting. Each COV typically consists of five to 20 external experts who review one or more programs over a two or three day period. These experts are selected to ensure independence, programmatic coverage, and balanced representation. They typically represent academia, industry, government, and the public sector. Approximately one-third of NSF activities are assessed each year.
- (4) Project-level Assessment Project-level assessment is performed at NSF by merit review using two criteria: the intellectual merit of the proposed activity and its broader impacts. Proposals may also be evaluated according to additional criteria that are specific to the funding opportunity.



NSF's performance assessment process is illustrated in the chart below.

What's more, under the requirements of the GPRA bill about federal agencies, NSF needs to prepare three documents for the overall performance assessment as the institutional basis:

(1) A strategic plan that provides long-run strategic goals derived from the agency's statutory mission (due Congress September 30, 1997, with updates required at least every three years);

(2) An annual performance plan that derives specific short-run performance goals from the long-run general goals in the strategic plan (due Congress in February 1998, and each year thereafter, with each year's budget request);

(3) An annual performance report that examines whether goals were met and what was accomplished with the resources expended (due Congress by March 31, 2000, and each year thereafter).

GPRA ties agency reporting requirements to the annual budget cycle and is quite specific about the concepts which should anchor planning and assessment. Since documents for the various acts must present consistent information and data, the significance of GPRA concepts extends beyond the application of the Act itself.

NSF has integrated the GPRA and PART processes with its long-standing external expert evaluation process through Advisory Committees (ACs) and Committees of Visitors (COVs). NSF relies on the judgment of these external experts to maintain high standards of program management, provide advice for continuous improvement of performance, and ensure

openness to the research and education community served by NSF.

3 Some suggestions about performance assessment of NSFC

From the 1990s, some internal divisions of NSFC have actively explored some performance evaluations at the level of projects, and achieved some goals. But, at present, the research about overall operation and performance of NSFC and the efficiency of the use of funds is far from adhering to policy. Generally speaking, in our country, Performance Assessment of NSFC is still at an exploratory stage; it is not as comprehensive as the NSF performance management and assessment. However, as the Chinese government's performance reform and the performance budget reform keep progressing, performance evaluation is imperative for NSFC if we want to improve the NSFC management at a higher level. We believe that NSFC can make some efforts in the following aspects:

(1) Establish and improve performance assessment system gradually. The performance assessment of NSF is directed by GPRA act, under the supervision of the president and the office of management budget (OMB), with the use of PART tool, and now it has formed a sound set of performance appraisal process and method. Now in China, we still do not have any laws about performance assessment. So for the NSFC, it is urgent to establish a comprehensive performance assessment procedures and methods, and thereby performance assessments at all levels can ob-

tain institutional security. In the present status of assessment in China, the scientific performance assessment of NSFC can not be accomplished overnight. That is to say, we should work step by step. Some sections and financing plans could be selected to conduct performance evaluation, thus we can constantly draw lessons, perfect the system and expand the scope of measures to realize scientific assessment of the overall performance step by step.

(2) Pay attention to the arrangement and the methods of performance assessment. As mentioned previously, the NSF performance evaluation has four levels from top to bottom, and each level has its own assessment experts. According to the NSFC's organizational structure, the performance evaluation can be carried out by top-down stages: NSFC overall performance evaluation—Branch divisions Performance Assessment—performance evaluation of various funding schemes—performance assessment of project. Each level of assessment must have specific manner according to their characteristics, and every assessment should be based on its lower level. This can gradually establish and improve a multi-level performance evaluation system.

At present the performance assessment methods mainly fall into three kinds: the first one is qualitative methods, which mainly depend on peer review; the second one, quantitative methods, such as bibliometrics; the third one is an integrated approach. Each method has its own limitations. So concerning the existing problems in the scientific community and the characteristics of the performance scientific evaluation, the best way is to consider the merits of the qualitative and quantitative analysis and at the same time, involve the various direct and indirect impacts of factors and take the impact of scientific research in the long phase effectiveness into account.

(3) Attach more importance to the use of the performance assessment results. First, NSFC performance assessment is not only to demonstrate or prove the achievement in the past, but also to improve and do a better work in the future, in which the significance of the performance assessment really lies. Through performance, we must make sure that the strategic positioning of NSFC is in consistence with the need of the country, and find out the current deficiencies of NSFC in respect of fund subsidy policy, management and so on, and finally improve it. Second, combine the performance assessment results with the budget. For the projects and plans that go on well, we can maintain or intensify support to spark their creativity. Moreover, the performance assessment needs an outside public participation in all sections, not just related to scientific research personnel matters. Through displaying the result of the performance evaluation to the public, we can get more understanding and support.

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