

Review

Comprehensive management of research budgets in agricultural research Institutes in China

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Over the years, increasing attention has been focused on the implementation rather than the preparation of research budgets in the agricultural research institutes in China. It resulted in unscientific and irrational budgeting of research funds. The practical implementation of research funds has also been adversely affected. After investigating three provincial-level institutes for agricultural research, we analyzed the problems as well as their root causes with regards to budgeting and implementation of research funds. The possible solutions and suggestions are finally highlighted.

Key words: Research funds, budget preparation, budget implementation, China.

INTRODUCTION

Efficient management is a powerful guarantee for the development of public agricultural research institutions (Bin et al., 2012). The research budget is an important part of management, which has important implications for the development of the institute (Bin et al., 2013). As the government of China is investing more in scientific research, more attention has been paid to if the preparation of the research budget is scientific, foresighted and reasonable (Liu and Meng, 2011; Liu, 2011). The preparation of a research budget is not only an important criterion for evaluating a project and arranging the fund, but also a major link in managing science and technology projects. It determines whether a project can be successfully implemented. However, for the recent several years, more emphasis has been put on the implementation than on the preparation of research

budgets, resulting in an unscientific and irrational budgeting, as well as a great gap between the budget and practical demands (Chen, 2012; Li, 2011).

The objective of this paper is to analyze problems and deficits in Research Budgets in Agricultural Research Institutes in China. Drawing from our years of experience in financial management and agricultural research, especially from recent investigation on three provincial-level institutes for agricultural research including Shandong Cotton Research Center (SCRC), Crop Research Institute (CRI) of Shandong Academy of Agricultural Sciences (SAAS) and Peanut Research Institute (PRI) of SAAS, we present and discuss the major problems in the preparation of research budgets in the agricultural research institutes in China and analyzed their root causes. We then propose some recommendations and

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Table 1. Existing problems in budget preparation in three research institutes.

Problems in budget preparation	Related institute
Irrational budget structure	SCRC, CRI and PRI*
The omission of some routine expenses	SCRC and CRI
Final account not tallying with recorded data	CRI and PRI
A lot of minor errors and obvious logical mistakes	SCRC and PRI
Budgets exceeding the carrying capacity of the research institute	SCRC, CRI and PRI

*SCRC, CRI and PRI indicate Shandong Cotton Research Center, Crop Research Institute, and Peanut Research Institute of Shandong Academy of Agricultural Sciences (SAAS), respectively.

possible solutions to problems identified.

EXISTING PROBLEMS IN RESEARCH BUDGET PREPARATION

A very common problem identified with the preparation of research budget is that it is generally unscientific and unreasonable, without sufficient details (Liu, 2013). Investigations have shown the following five specific problems which have existed in either of the three research institutes (Table 1): first, the structure of budget preparation is irrational - the budget is usually more than what is really needed, and research institutes would rather purchase everything they need than search for cooperation with other organizations; second, the budget often omits some routine expenses; third, the final account does not tally with recorded data; fourth, the budget has lots of minor errors and obvious logical mistakes; fifth, some of the budgets far exceed the carrying capacity of the research institute.

Special features of agricultural research activities

Agricultural science research activities are usually characterized by wide range of study subjects (agriculture, forestry and fishery), easily affected by environment and agricultural practices and long duration (Chen, 2012). Agricultural studies, especially field experiments, are usually affected by uncertainties of natural conditions, such as season, climate, location, and so on, which have greatly increased the difficulties of preparing an accurate estimate of research expenses in advance. These uncertainties have also exacerbated the risks of investment to the extent that many agricultural studies cannot attract the desired investment from some enterprises and society like some industrial projects. Therefore, investment for most agricultural science studies is mainly from the government. Since most agricultural research programs are supported by the national budget, some research institutes even fabricate basic data to attract investment, thus, some of the research budgets have lots

of problems.

Unscientific budget prepared by researchers

It is required that the research budget should be prepared by professional financial staff, who, however, usually neither have the intention to get involved nor are welcomed by the research group (Chen, 2012). Therefore, generally the research budget of agricultural research institutes is independently completed by the researchers themselves, who have little knowledge about finance. As a result, there are usually lots of problems in the budget prepared by the researchers alone. Even if some professional financial staff gets involved in the preparation of budget, the budget is still unscientific due to their lack of professional knowledge in the field being budgeted for (Liu, 2013).

Unconvincing budget preparation

The preparation of agriculture research budget should give a detailed explanation of the uses and reasons for each expense. But in practice, the description is so simple that the budget is neither convincing nor scientific (Chen, 2012).

PROBLEMS IN BUDGET IMPLEMENTATION

Lack of attention to the implementation of budget

Many researchers pay great attention to the preparation of budget but lose sight of its implementation. They usually spend the money at their free will without any planning. Therefore, the budget cannot be spent where it is really needed.

Misuse of budget

As the government is investing more and more in

agricultural research, a researcher sometimes is in charge of several different research programs. As a result, the budgets for these programs are usually mixed together, for example, the money which should have been spent on buying chemical reagents in one project may be used for a field experiment in another project (Chen, 2012).

Overspending on labor, consultancy and management

The laws prescribe that money spent on labor, consultancy and management should not exceed the budget. However, some research institutes do not make a detailed plan for each expense in the budget in advance; the money allocated for some items is more than what is actually needed, while that for other items is far less.

Moreover, the procedures for applying for the money for labor and consultancy are incomplete. For example, some researchers apply for the money in the name of buying office supplies and taking taxi. The whole application procedures are not strictly regulated, and the problems caused have greatly affected the practical implementation of the budget.

Surplus research budget

On the one hand, many researchers usually spend the money in a thrift way, resulting in surplus research budget; on the other hand, in the mind of some researchers, since the money left would not be returned to government, it is better to reserve it for future use. There are usually four reasons leading to these two aspects: first, the budget is unscientifically prepared; second, the programs are submitted for funding to multiple channels, and different budgets are often mixed; third, the researchers try every means to save their expenses of the budget; fourth, in order to save money, researchers purchase some domestically produced equipment rather than imported ones.

Incomplete procedures for budget allocation for some cooperative research programs

Currently, a lot of research programs are run by several institutes in collaboration, each being in charge of different tasks. Generally, the institutes would sign a contract to clarify the allocation of budget, the distribution of tasks, etc., which requires that all the institutes should cooperate closely so that they can scientifically implement the budget. However, due to restrictions under the current system, the budget is not well implemented, and several problems appear during the entire implementation process (Song and Zhang, 2012).

All in all, it has become a common problem that the

agricultural research budget is not scientifically prepared. There are mainly three reasons for this: first, is the poor communication among research department, research group and finance department; second, is that the accounts of different projects and items are mixed together; third, is that the expense of self-collected money is not recorded separately.

IMPROVING THE MANAGEMENT OF BUDGET PREPARATION

Everything should be planned beforehand. It has become a general trend that the budget should be prepared carefully, scientifically and in advance, which requires all research institutes to reasonably plan the use of every budgeted fund to ensure scientific and complete implementation of the budget.

Strengthening the leadership and defining responsibilities

Whether the budget prepared is good or not is not only determined by the leader of the research program but also by each member of the research group. Therefore, both the leader and the members should be made aware of the importance and seriousness of budget preparation.

Full play of the role of each researcher

The research group shoulders the responsibilities of managing the team and preparing the budget. The members in the group should consider the following three aspects: first, the expenses of research budget should strictly follow relevant laws and regulations; second, the group should make clear the focus of the research group and avoid blind expense; third, the preparation of budget should follow the practical situation and avoid changing the budget plan repeatedly.

The finance department should play its part

It is required that the budget should be prepared and approved by the finance department before it is handed in. The expense for every program should be strictly planned and followed. The financial staff should be included in the research group and take part in the whole procedure of the research.

The structure and expense of research budget should be improved/clarified

Different kinds of research projects have different

structures of expenses, but they basically cover the following aspects: expense on equipment, materials, tests and experiments, fuel and energy, travels, meetings, international cooperation, publishing, and information dissemination, labor, consultancy, management, etc. Generally, the more detailed and comprehensive the budget is prepared, the more scientific and practical it is. During preparation of the budget, each item of expense shall be noted as clearly as possible. The expense on the purchase of equipment and materials shall be planned in details to see if it is reasonable and follows the national rules. The preparation of budget should not be made in haste and must be examined by the finance department so as to ensure that it is scientific, comprehensive and practical.

STRICTLY IMPLEMENTING THE BUDGET

No random change of budget

The implementation of a budget should strictly follow the plan, and avoid any random changes in the budget. Any change of expense on materials, tests and experiments, fuel and energy, publishing and information dissemination, etc. should be applied for by the leader of the research group and then approved by the research institute, while expenses on equipment, trips, meetings, international cooperation, labor and consultancy generally allows no increase. Any decrease should also be applied for first and then approved by the institute.

Expenses of the program should be specified

The budget shall be used exclusively for the scientific research, and any misuse of the fund for other purposes should be forbidden. And even the necessary expenses shall be done after careful planning and detailed calculation.

Allocation of expenses should be regulated

The person in charge of the whole research or in charge of each research subject should plan the use of money in advance to ensure an effective implementation of the budget.

Government's procurement

Government's procurement aims to improve the openness and transparency in the use of funds. It overcomes some drawbacks of the decentralized procurement in the past. Besides, the whole procedures of government

procurement are complete.

Executing the budget approval system

The institute in charge of the research program should ensure reasonable expense of budget. The expense on consultation shall not be paid to those researchers from government institutes who are already on government's pay roll.

Conclusion

The government budget as a kind of institutional design is a constraint mechanism for government action, and its soul is reflected in the constitutionality of government.

However, China's fiscal practice shows that government budget has not any effective constraints on the government actions and the discretionary acts of government budget is widespread in the process of budget preparation and implementation. Our analysis suggested that both the preparation and implementation of the agricultural research budget should be carefully and seriously dealt with. Research budget plays a vital role in the execution of agricultural studies. It is also of great importance to reasonably and effectively use the budget for the successful implementation of agricultural research projects. The preparation and implementation of budget should be given equal attention. The research department should supervise the application, execution and approval of the research project, while the finance department should examine the implementation of research budget regularly. A higher organization could assign an audit firm to examine the use of budget and seriously penalize illegal uses of research budget. Only when the financial and research staff work together and the preparation and implementation of budget are strictly regulated will the budget be effectively used for agriculture research.

A comprehensive budget management has played a significant role in internal management control of China's agricultural institutions. Therefore, agricultural institutions should establish a comprehensive budget management philosophy of science, establish and improve the overall budget management system, emphasis on control and evaluation aspects of this scientific management system to optimize their effectiveness.

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Conflict of Interests

The authors have not declared any conflict of interests.

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