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# PAYING FOR AGRICULTURAL PRODUCTIVITY

JULIAN M. ALSTON, PHILIP G. PARDEY,  
AND VINCENT H. SMITH, EDITORS

**T**hroughout the twentieth century improvements in agricultural productivity have been closely linked to investments in agricultural research and development (R&D), but since the 1970s many countries have made major changes in the way they fund and organize public agricultural R&D and in the incentives affecting private R&D. The book *Paying for Agricultural Productivity*, edited by Julian M. Alston, Philip G. Pardey, and Vincent H. Smith and published by Johns Hopkins University Press, examines these changes in the developed world (highlighting developments in Australia, the Netherlands, New Zealand, the United Kingdom, and the United States) as a step toward evaluating whether the new approaches are raising or lowering the efficiency and effectiveness of R&D.

## CHANGES IN R&D POLICY

**I**n the mid-1990s Australia, the Netherlands, New Zealand, the United Kingdom, and the United States together accounted for more than 40 percent of total public investment in agricultural research in the developed world, and much of the private spending as well. In all five countries, total funding for agricultural R&D, adjusted for inflation, stagnated or fell during the 1980s but (except in New Zealand and more recently the United States) began to grow again, though more slowly, in the 1990s. At the same time, spending on private agricultural research has risen by just over 5 percent per year since 1981 and now amounts to almost half of total agricultural R&D expenditures in developed countries. These developments were driven by tighter government budgets in each country and by changing attitudes toward science and agriculture and the role of the public sector.

Over the past decade public agricultural research funding in the Netherlands, the United States, and the United Kingdom has placed a heavier emphasis on basic research, and in the Netherlands and the United Kingdom public funds for near-market research have been cut substantially. The economic arguments for shifting in this direction are clear. What is not so clear is the extent to which the reported shifts of resources reflect real changes in research programs rather than mere relabeling.

As public funding for agricultural research has slowed and shifted away from near-market research, countries have devised ways of gaining more industry funding for applied research. Australia, the Netherlands, New Zealand, and the United Kingdom have imposed government-sanctioned levies on industry to support commodity-specific, near-market R&D.

Industry groups have also increased their representation on key public agricultural research oversight committees, especially in Australia, the Netherlands, and the United Kingdom. Some countries have made modest attempts to develop joint public-private research ventures in agricultural research. At the same time, it is increasingly common to charge private-sector organizations the full cost of research performed for them by public research facilities.

The Netherlands and the United Kingdom have sought to infuse more competition into the market for research by privatizing or partially privatizing public agricultural research entities. These countries, like Australia, are moving from block grants to competitive grants and increasingly relying on evaluations of research performance to determine future funding levels. A more modest shift in this direction has occurred in the United States. In



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2033 K STREET, N.W.

WASHINGTON, D.C. 20006-1002

U.S.A.

PHONE: 1-202-862-5600

FAX: 1-202-467-4439

E-MAIL: IFPRI@CGIAR.ORG

WEB: WWW.IFPRI.ORG

addition, in all five countries, competitive processes have been extended to allow a broader pool of potential applicants for agricultural research funds (including purely for-profit private research organizations as well as government agencies, universities, and not-for-profit research institutions).

Another important issue concerns the structure of publicly funded agricultural research institutes. Particularly in the Netherlands and the United Kingdom, over the past 15 years public agricultural research facilities have been merged and privatized to exploit economies of scale, size, and scope. The pace of change has been much slower in the United States.

## ROOTS OF CHANGE IN AGRICULTURAL RESEARCH

The changes in agricultural research policies in the five study countries over the past 20 years were broadly similar. In all five countries, the market-oriented governments that came to power in the late 1970s and early to mid-1980s reduced the growth rates of government spending on science and agricultural R&D. These governments also tended to rationalize other elements of R&D policy by increasing competition among researchers, increasing the accountability of research organizations, increasing industry's role in near-

market research and in funding decisionmaking, and, in the Netherlands and the United Kingdom, privatizing some research institutes with more applied research agendas.

Another factor in the changing policies is the relative decline in the role of farming in the economy as a whole, as well as in the food production and marketing chain. Whereas agricultural R&D was once devoted primarily to the farming sector, now it extends to a broader range of prefarming and postharvest technologies. In addition, science itself has changed. The opportunities for agricultural research are different as a result of developments such as modern biotechnology.

Another element of change concerns what people, and therefore policymakers, care about. As per capita incomes have risen over time in the richer countries, demand for environmental amenities, food safety, variety, and convenience has grown. As a result, these have become more important issues in the agricultural research agendas of developed countries.

## CONCLUSION

The fundamental forces for change in agricultural R&D policy in one country are likely to be shared with other similar countries. Consequently, it is useful for any one country to learn

from the institutional experiments conducted in other countries, to imitate their successes, and to avoid repeating the mistakes made abroad as well as at home. The data and institutional details assembled in this book greatly facilitate such cross-country comparisons. Of course, although the five countries studied in *Paying for Agricultural Productivity* share many important characteristics, they differ in important ways with respect to fundamental political institutions, infrastructure, and the organization of the agricultural sector. Thus it would be folly to assume that all countries should adopt similar agricultural R&D funding and institutional policies.

Unfortunately, assessing research policies requires a long time (since their effects take place with long lags) and a lot of information. This study represents an important step in collecting and assessing the information needed. The ultimate measure of these policy changes—net benefits to society—will become clear over time as the effects of these policies play out.

*Contributors to the book are Julian M. Alston, Jason E. Christian, Barbara J. Craig, Michael S. Harris, Veronica Jacobsen, John D. Mullen, Philip G. Pardey, Michael Phillips, Jenifer Piesse, Johannes Roseboom, Hans Rutten, Grant M. Scobie, Vincent H. Smith, and Colin Thirtle.*

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