S&T Private-Public Partnerships for Sustainable Development: Toward What End? With What Means?

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Harvard University, USA
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Agenda

• Motivation
• Key questions
• Introduction of papers in the panel
Motivation

• Shift in sources of information
MONEY SPENT ON RESEARCH AND DEVELOPMENT

In the United States, private companies have been outspending the public sector in agricultural research since the early 1980's, and the research budget for the Agriculture Department has remained constant while other agencies have increased their research spending.

AGRICULTURAL RESEARCH EXPENDITURES IN THE U.S., IN BILLIONS OF 1996 DOLLARS

- Public Sector
- Private Sector

$4.0 Billion

'70 '71 '72 '73 '74 '75 '76 '77 '78 '79 '80 '81 '82 '83 '84 '85 '86 '87 '88 '89 '90 '91 '92 '93 '94 '95 '96
Who Holds Agricultural Patents?

A small group of private companies dominates the seed business, partly because of acquisitions of smaller companies, and a 1998 list of the top 30 recipients of agricultural biotechnology patents shows that the small group also holds a majority of the patents.

<table>
<thead>
<tr>
<th>PATENT HOLDERS (Public entities shaded)</th>
<th>PATENTS (Public)</th>
<th>Private</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHARMACIA (Monsanto, Agrow Seed Co.)</td>
<td>207</td>
<td></td>
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<tr>
<td>DU PONT (Pioneer Hi-Bred International)</td>
<td>279</td>
<td></td>
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<tr>
<td>SYNGENTA (Zeneca, Novartis Corporation, Ciba Geigy, Sandoz, Imperial Chemical Industries)</td>
<td>173</td>
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<td>DOW CHEMICAL (Mycogen)</td>
<td>157</td>
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<tr>
<td>U.S.D.A.</td>
<td>102</td>
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<tr>
<td>AVENTIS (Plant Genetic Systems, Hoechst, Rhone-Poulenc)</td>
<td>77</td>
<td></td>
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<tr>
<td>UNIVERSITY OF CALIFORNIA</td>
<td>48</td>
<td></td>
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<tr>
<td>SAVIA (DRA Plant Technology)</td>
<td>38</td>
<td></td>
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<tr>
<td>CORNELL UNIVERSITY</td>
<td>33</td>
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<td>IOWA STATE UNIVERSITY</td>
<td>29</td>
<td></td>
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<td>UNIVERSITY OF WISCONSIN</td>
<td>24</td>
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<td>LUBRIZOL</td>
<td>22</td>
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<td>ECOCEN</td>
<td>19</td>
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<td>W.R. GRADE</td>
<td>10</td>
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<td>TEXAS A&amp;M UNIVERSITY</td>
<td>17</td>
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</tr>
<tr>
<td>MICHIGAN STATE UNIVERSITY</td>
<td>16</td>
<td></td>
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<tr>
<td>NORTH CAROLINA STATE UNIVERSITY</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>RESEARCH CORPORATION TECHNOLOGIES</td>
<td>15</td>
<td></td>
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</tbody>
</table>

Source: Gregory Orf, Department of Agricultural and Resource Economics, University of California, Berkeley
Motivation, cont’d

• Increasing questions about equity and distribution of information as a resource
WTO
Anti-globalization
Concerns at CBD
Motivation, cont’d

• Increasing interest in private-public partnerships to produce S&T for sustainable development:

  - The Plan of Implementation developed at the Johannesburg Summit explicitly calls for establishing partnerships between scientific, public and private institutions, and integrating scientists’ advice into decision-making bodies...

Public-private - 8 times. Partnership 53 times.

(parallel to participation and transparency)
Goal of panel - illicit discussion, research agenda, ways forward, scoping
Motivation, cont’d

• **BUT,**
  there is little systematic understanding of the conditions under which public-private partnerships for S&T make sense and how to effectively structure them.

Public-private - 8 times. Partnership 53 times.

(parallel to participation and transparency)
Goal of panel - lelicit discussion, research agenda, ways forward, scoping

[Some in organizational management literature, some in development literature...]
Question 1

For what problems and under what conditions are public-private partnerships useful?
Question 2

What are central challenges for public-private partnerships?
Question 3

How can partnerships be structured to meet both private goals, and public goods?
Papers

- *Partnerships for rural Prosperity at the Forest Margins*
  Dagmar Timmer, World Agroforestry Centre (ICRAF), Kenya;
  Coauthors: Thomas Tomich, Cheryl Palm

- *Scaled Partners: Public-Private Interactions for "Sustainable" Mineral Development*
  Saleem Ali, University of Vermont, United States

- *Commercialization of Climate Forecast Technology: Role of the Private, Public and End-user Intersections*
  Maryam Golnaraghi, Climate Risk Solutions, Inc., United States
  Presented by David Cash
Question 1

For what problems and under what conditions are public-private partnerships useful?

- Complementarities of public and private goals
- Risk sharing
- Resource sharing (mining)
- Linking general to specific/global to local (agricultural development)
- Efficiencies of scale (climate forecasting)
- Cause of problems/source of solutions (ozone)
- Technology transfer (health care)
Question 2

What are central challenges for public-private partnerships?

- Conflicting goals (private goals v. public goods)
## Private goals/public goods

<table>
<thead>
<tr>
<th>Private goals</th>
<th>Public goods</th>
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<tbody>
<tr>
<td>profit maximization</td>
<td>environmental protection</td>
</tr>
<tr>
<td>intellectual property protection</td>
<td>poverty alleviation</td>
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<tr>
<td>expanding markets, niche marketing</td>
<td>knowledge production</td>
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<tr>
<td>acquiring new S&amp;T</td>
<td>technology transfer</td>
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<tr>
<td></td>
<td>protection of indigenous knowledge and cultures</td>
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</tbody>
</table>
Question 2

What are central challenges for public-private partnerships?

- Conflicting objectives/interests (private goals v. public goods)
- Conflicting values
- Conflicting notion of rights
- Non-compatible rules
- Problems of scale
- Power asymmetries
- Information asymmetries
Question 3

How can partnerships be structured to meet both private goals, and public goods?

• incentives
• accountability
• rules
• boundary management functions (via boundary organization?)
  - Convening
  - Translation
  - Coordination
  - Mediation
• boundary objects
• salience, credibility and legitimacy
• role apportionment