Chinese Knowledge Diaspora in the Development of Chinese Research Universities

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International Conference on Diaspora for Development,
July 13-14, 2009, the World Bank
Outline of Presentation

- Chinese diaspora and the historic review of the Chinese knowledge diaspora (CKD)
- China’s national innovation system (NIS) and the Importance of the higher education institutions (HEIs)
- Case study on the 111 Project
- Research findings
- Conclusion
Chinese Diaspora and the Historic Review of the Chinese Knowledge Diaspora (CKD)

- Over 30 million Chinese diaspora have played significant role in China’s reform and opening up since 1978.
- The rise of CKD today is not a new phenomenon.
- Generally, CKD are closely connected with and actively and deeply involved in China’s social transformation and development.
CKD as Huge Talent Pool

- For those who stay in overseas
  In 2007, Chinese scientists accounted for 32,000, or almost one-quarter, of the 142,000 foreign students receiving PhDs in the US.
  In 2007, 2,600 Chinese life scientists had tenured position among whom 800 were professors in the research universities of 34 states in the US.
  86% of Silicon Valley’s Chinese residents held at least a master degree.

- For those who returned
  78% of the presidents of universities under the Ministry of Education,
  84% of the academicians at the Chinese Academy of Sciences,
  75% of the academicians at the Chinese Academy of Engineering
  62% of PhD supervisors
Brain Drain

Overseas Chinese Students and Returnees (thousand, %)

Stay Rates of Foreign Doctorate Recipients from US Universities

# China’s Efforts to Deploy its Knowledge Diaspora Option 1

<table>
<thead>
<tr>
<th>Name</th>
<th>Responsible Authority</th>
<th>Date of Inception</th>
<th>How many recruits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1</strong> Hundred Talents Program</td>
<td>China Academy of Sciences (CAS)</td>
<td>1994</td>
<td>1122 overseas scholars among whom 178 in 2008</td>
</tr>
<tr>
<td><strong>2</strong> National Outstanding Youth Foundation</td>
<td>The National Natural Science Foundation of China (NSFC)</td>
<td>1994</td>
<td>From 1994 to 2004, this foundation supported 1174 young scholars among whom 366 have foreign doctorates, accounting for 32.8%.</td>
</tr>
<tr>
<td><strong>3</strong> “Chunhui Jihua” (Spring Light Program)</td>
<td>Ministry of Education (MOE)</td>
<td>1996</td>
<td>Since the program’s establishment in 1996 approximately 200 groups, and 12,000 scholars have received grants.</td>
</tr>
<tr>
<td><strong>4</strong> Changjiang Scholars Program (Cheung Kong Scholars Program)</td>
<td>Ministry of Education (MOE)</td>
<td>1998</td>
<td>From 1998 to 2007, 1308 scholars.</td>
</tr>
<tr>
<td><strong>5</strong> International Partnership Program for Creative Research Teams</td>
<td>China Academy of Sciences (CAS) &amp; the State Administration of Foreign Experts Affairs of the People’s Republic of China (SAFEA)</td>
<td>2001</td>
<td>By the end of 2005, 35 creative research teams were formed where 224 overseas scholars and 362 domestic scholars worked for the program.</td>
</tr>
</tbody>
</table>

*Source: Author’s research*
## China’s Efforts to Deploy its Knowledge Diaspora Option 2

<table>
<thead>
<tr>
<th>Name</th>
<th>Responsible Authority</th>
<th>Date of Inception</th>
<th>How many recruits</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>Returned Overseas Chinese scholars Entrepreneur Week</td>
<td>Central Committee of the Chinese Communist Youth League, All-China Federation of Youth, Western Returned Scholars Association (WRSA)</td>
<td>2001</td>
</tr>
<tr>
<td>7</td>
<td>&quot;HOME&quot; PROGRAM (Help Our Motherland through Elite Intellectual Resources from Overseas)</td>
<td>China Association for Science and Technology</td>
<td>2004</td>
</tr>
<tr>
<td>9</td>
<td>The Program of Introducing Talents of Discipline to Universities (the 111 Project)</td>
<td>Ministry of Education (MOE) &amp; the State Administration of Foreign Experts Affairs of the People’s Republic of China (SAFEA)</td>
<td>2005</td>
</tr>
<tr>
<td>10</td>
<td>1,000 Talents Scheme</td>
<td>the Organization Department of the Central Committee of the Communist Party of China</td>
<td>2008</td>
</tr>
</tbody>
</table>
THE CHINA DUMBELL MODEL (Wescott, 2005)

huiuo fuwu  "return and serve the Motherland"
weiguo fuwu  "serve the mainland"

PRC Multiple Affiliations  

rouxing liudong  "flexible mobility"

Destination Country Multiple Affiliations
China’s National Innovation System (NIS) and the Importance of the Higher Education Institutions (HEIs)

- China’s need for innovation as the engine for growth.
- China is already a major world player in science and technology (S&T) in terms of funding and human resources for research and development (R&D).

the Importance of the Higher Education Institutions (HEIs) in the NIS

Three key R&D performers

- **ENTREPRISES**
  - 28,567 Large and Medium Sized firms (of which 6,775 have R&D labs)
  - 248,813 small firms (of which 22,307 with S&T activities)
  - 41,990 in S&T Industrial Parks
  - 39,491 in Technology Incubators

- **HIGHER EDUCATION INSTITUTIONS**
  - 1,792 universities and colleges (of which 678 with R&D activities)
  - Host 95 State Key Laboratories
  - 49 university S&T parks contain 4,100 start-up firms and 71,000 entrepreneurs

- **RESEARCH INSTITUTES**
  - 3,901 institutes (560,000 employees)
  - Host 58 State Key Laboratories

R&D expenditures of the higher education sector (Billion RMB)

<table>
<thead>
<tr>
<th>% share of</th>
<th>Firms</th>
<th>Research institutes</th>
<th>Higher education</th>
</tr>
</thead>
<tbody>
<tr>
<td>R&amp;D expenditures $^1$</td>
<td>68.2</td>
<td>20.9</td>
<td>9.9</td>
</tr>
<tr>
<td>Basic research</td>
<td>8.7</td>
<td>46.4</td>
<td>44.9</td>
</tr>
<tr>
<td>Applied research</td>
<td>32.4</td>
<td>40.7</td>
<td>26.9</td>
</tr>
<tr>
<td>Technological development</td>
<td>83.7</td>
<td>13.3</td>
<td>3.0</td>
</tr>
<tr>
<td>Technology market $^1$</td>
<td>59.2</td>
<td>15.3</td>
<td>7.9</td>
</tr>
<tr>
<td>Patent applications $^1$</td>
<td>64.6</td>
<td>10.8</td>
<td>23.6</td>
</tr>
<tr>
<td>Government funding</td>
<td>13.0</td>
<td>66.5</td>
<td>20.4</td>
</tr>
</tbody>
</table>

Source: China Statistical Yearbook on Science and Technology; Motohashi and Yun (2005); OECD.
Latest Development of Chinese HEIs (211 Project, 985 Project)

211 universities:

96% of state key labs
85% of state key disciplines
70% of government-funded research programs
80% PhD students, 67% masters

The succeeding 985 Project was even more selective, with 39 research intensive universities of the 211 universities.
Case Study on the Program of Introducing Talents of Discipline to Universities (the 111 Project)

- A new attempt that combines the demand of the development of the NIS and universities and the brain circulation of the CKD.
- Based on the existing state, provincial, and ministry key scientific and technological centres in the leading universities.
- Aims to establish 100 innovation centres in 985 and 211 Project universities by gathering 1,000 overseas talents from the top 100 universities and research institutes worldwide to enhance the innovation capability and overall competitiveness of the leading universities in China.
- 126 innovation centres are located in 69 universities and all of them are 211 universities.
- Most disciplines of these innovation centres are S&E.
- RMB 600 million (US$ 88 million) for consecutive 5 years.
Distribution of the Innovation Centres by Discipline (*the 111 Project*)

- Engineering, 77
- Science, 24
- Social Science, 4
- Agriculture, 13
- Medical Science, 8

Source: Author’s research
My research on the 111 Project

- Aim of the research
- Methodology (interview + survey)
- Selection of the cases:
  - 3 universities, 8 innovation centres
Demographic Characteristics of the Participants

Survey
- 68 domestic, 19 overseas Chinese, and 15 overseas non-Chinese scholars.
- Nearly 90% of domestic scholars are male, all the overseas scholars are male.
- 90% of domestic scholars are in their 30s or 40s, and 95% of overseas Chinese scholars are between 40 and 60 years old.
- 90% of the respondents are professors or associate professors.

Interview
- 17 domestic, 10 overseas Chinese, and 5 overseas non-Chinese scholars.
- 35% of domestic scholars are female, none of the overseas scholars is female.
- Nearly all interviewees are professors or associate professors.
Tentative Findings and Themes - Survey

- Previous established relationship
- Frequency of visits and duration of visits
- Reasons for collaboration with overseas university or institution
- How the 111 Project contributes to their own research
- Main problems while working for the 111 Project
Tentative Findings and Themes - Interview

- Factors affecting success or less success of transnational collaboration
- Ways of contribution are different by age, status, personality.
- Sense of obligation to pay back the education they received in China
- Identity, and sense of belonging to Chinese culture
Tentative Findings

- The 111 Project successful in raising the research level of Chinese universities, but to what extent?
- Whether overseas scholars' talent and skills have been well utilized
- Prospect of further opportunities to collaborate with Chinese colleagues in the future
- Suggestions to improve the 111 Project
Conclusion

- CKD is a substantial resource for the Chinese HEIs and China’s NIS.
- CKD plays a unique role in linking China to the international scholarly community.
- Chinese government is successful in mobilizing CKD and facilitating their contribution to the homeland, notwithstanding some system impediments.
- Looking into the future
Thank you!

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