



MILLENNIUM SCIENCE INITIATIVE CHILE

Forum on Research and Innovation (BMBF)
XI. LATINAMERICAN CONFERENCE OF THE
GERMAN INDUSTRY

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MILLENNIUM SCIENCE INITIATIVE

- Created in 1999, Chile pioneer, to be implemented in developing countries
- First stage with World Bank support (1999 – 2002). Then PBCT (MSI achievements)
- A competitive fund

Definition of Centers of Excellence

- Groups of scientists within common area (Associated /Senior/Young/ Students/ Postdocs/ Support staff).
From one or **several** Institutions (Universities)
- **INSTITUTES**: ~ 10 Associate Researchers (~50 total)
5+5 years - M USD: 1.2 / year
- **NUCLEI** : ~ 3 Associate Researchers (~ 25 total)
3+3 years - M USD: 0.27 / year.
(Focused primarily to young scientists)

ACTIVITIES OF INSTITUTES AND NUCLEI

1. CUTTING EDGE S&T RESEARCH
2. FORMATION OF YOUNG SCIENTISTS
3. NETWORKING ACTIVITIES WITH INTERACTION AND COLLABORATION AT NATIONAL AND INTERNATIONAL SCALES
4. OUTREACH ACTIVITIES (PUBLIC, EDUCATIONAL, PRIVATE, INDUSTRY, SERVICES, OTHER)

WORKING AREAS

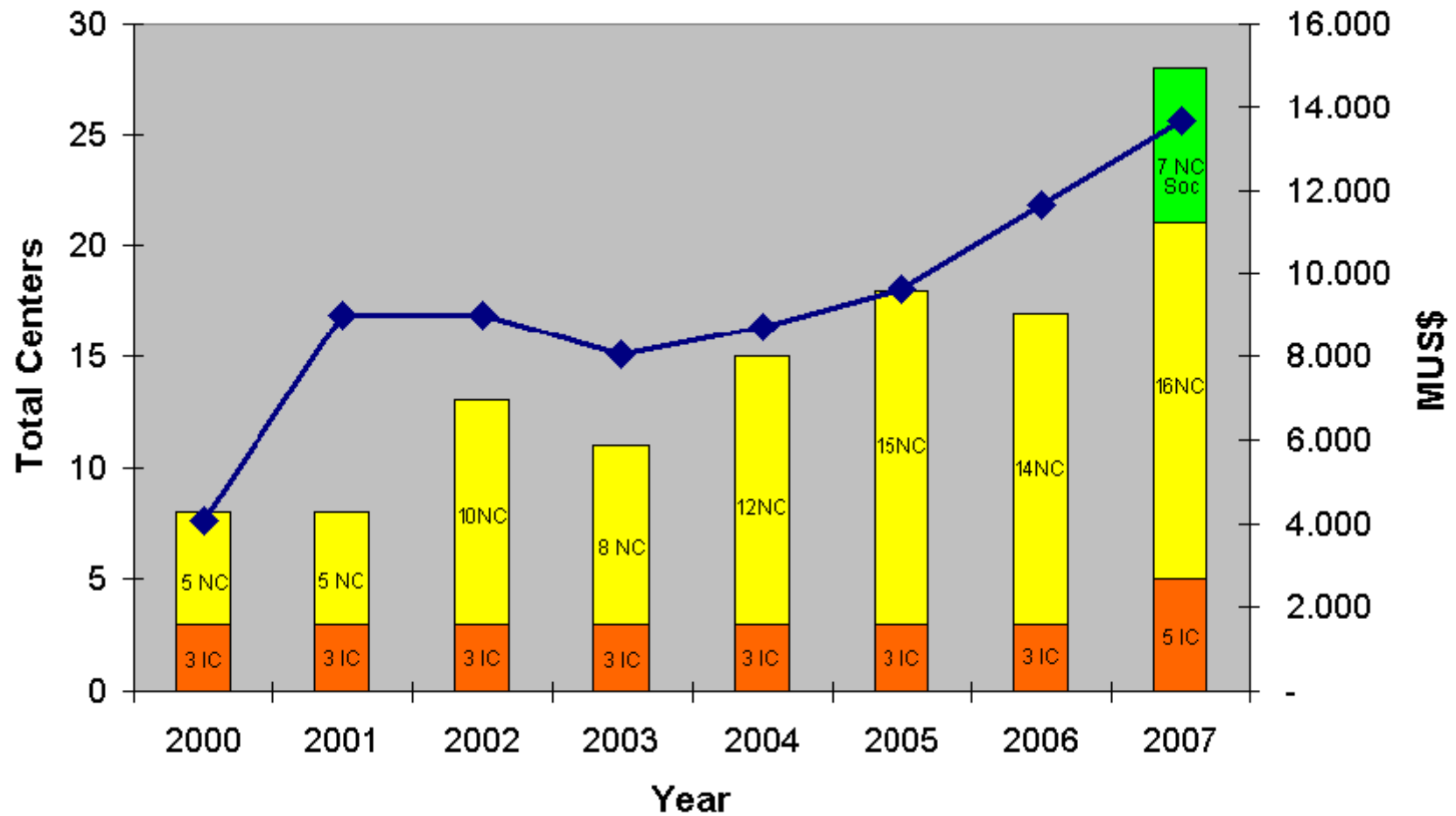
- Biotechnologies
- Medical Sciences
- Genetics
- Microbiology
- Ecology
- Materials Physics
- Mathematics
- Chemistry
- Seismology
- Information and communication technologies
- Glaciology
- Energetic processing and transportation
- Industrial optimization
- (Among others)

ORIGINAL FEATURES OF THE MSI IN RELATION TO OTHER S&T COMPETITIVE FUNDS IN CHILE

- 8 DISTINGUISHED FOREIGN SCIENTISTS (PROGRAM COMMITTEE)
- FUNDS DIRECTLY TO GROUPS (USE SIMPLE, FLEXIBLE & AUTONOMOUS)
- AN OUTREACH COMPONENT: COMPULSORY
- NO AREAS/THEMATIC PRIORITIES
- FEASIBILITY OF INDEPENDENT CENTERS FORMATION
- BIDDING PROCESSES: PRELIMINARY PROPOSALS, FOLLOWED BY FULL PROPOSALS

(SEVERAL ON PROGRESSIVE ADOPTION IN CHILE)

MSI Centers Evolution: Number and Operating Funds



■ Institutes E&N Sci.
 ■ Nuclei E&N Sci.
 ■ Nuclei Soc. Sci.
 ◆ Operation MSI Centers

BUDGET DISTRIBUTION:

94% to Institutes and Nuclei

6% to Management (3,4% Executive
Secretariat)

MONITORING AND EVALUATION

(PARTICULARLY RELEVANT AS PILOT MODEL)

FOREIGN EVALUATIONS

- PANELS OF INDEPENDENT INTERNATIONAL EXPERTS:
 - 2000 and 2001
- WORLD BANK: EVALUATION REPORT AT END OF 3 YEARS PHASE (WB PROJECT) 2003
- 2005: EVALUATION OF 3 INSTITUTES, AND 5 NUCLEI
(REPORTS: HIGHLY POSITIVE COMMENTS - WEB)

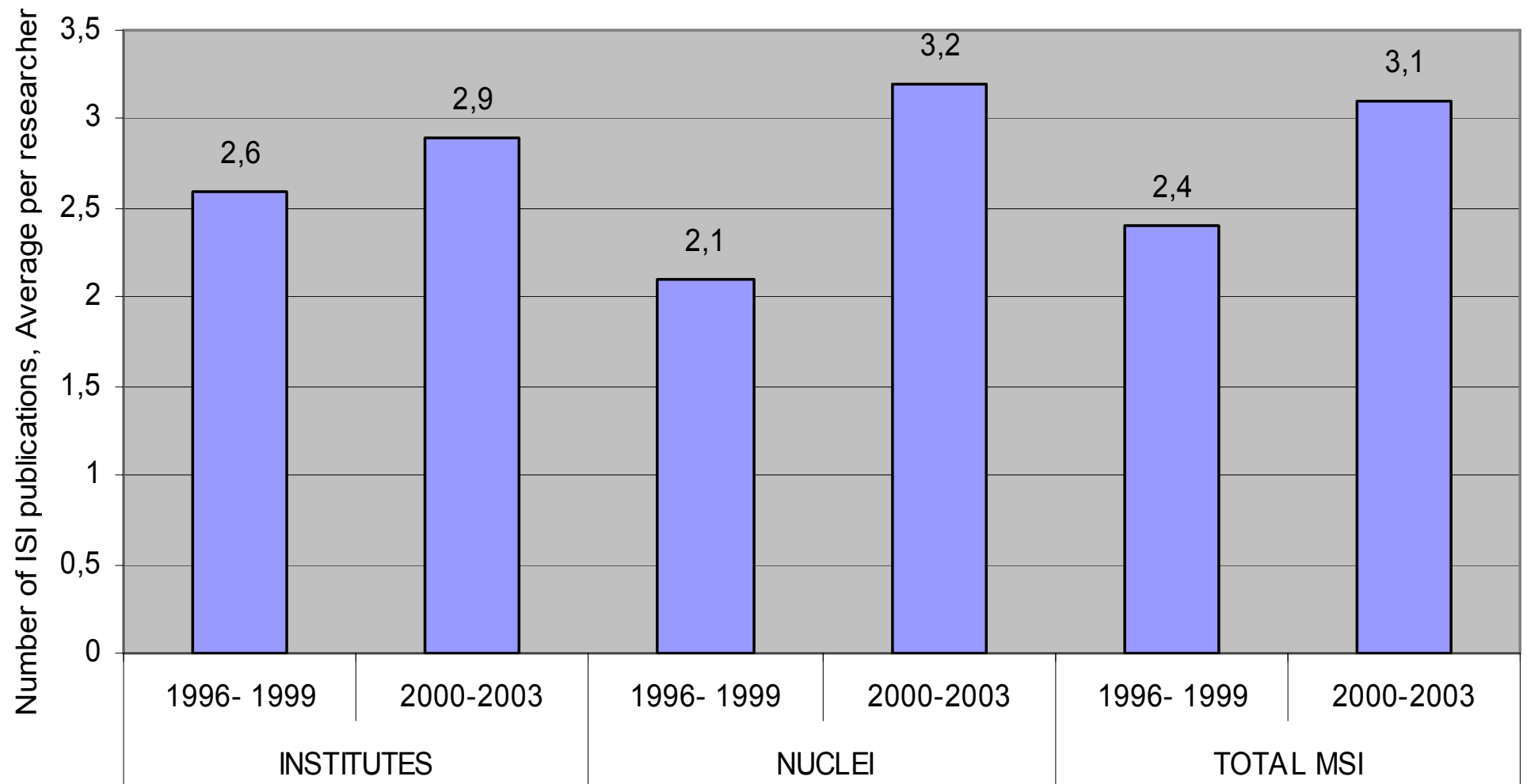
NATIONAL EVALUATIONS (CONSULTERIES)

- PRODUCTIVITY OF MSI CENTERS: BASELINE OF PARAMETERS AND INDEXES, FOLLOWED IN TIME (PERMANENT)
- GOVERNMENT EVALUATION OF NATIONAL PROGRAMS (2006)

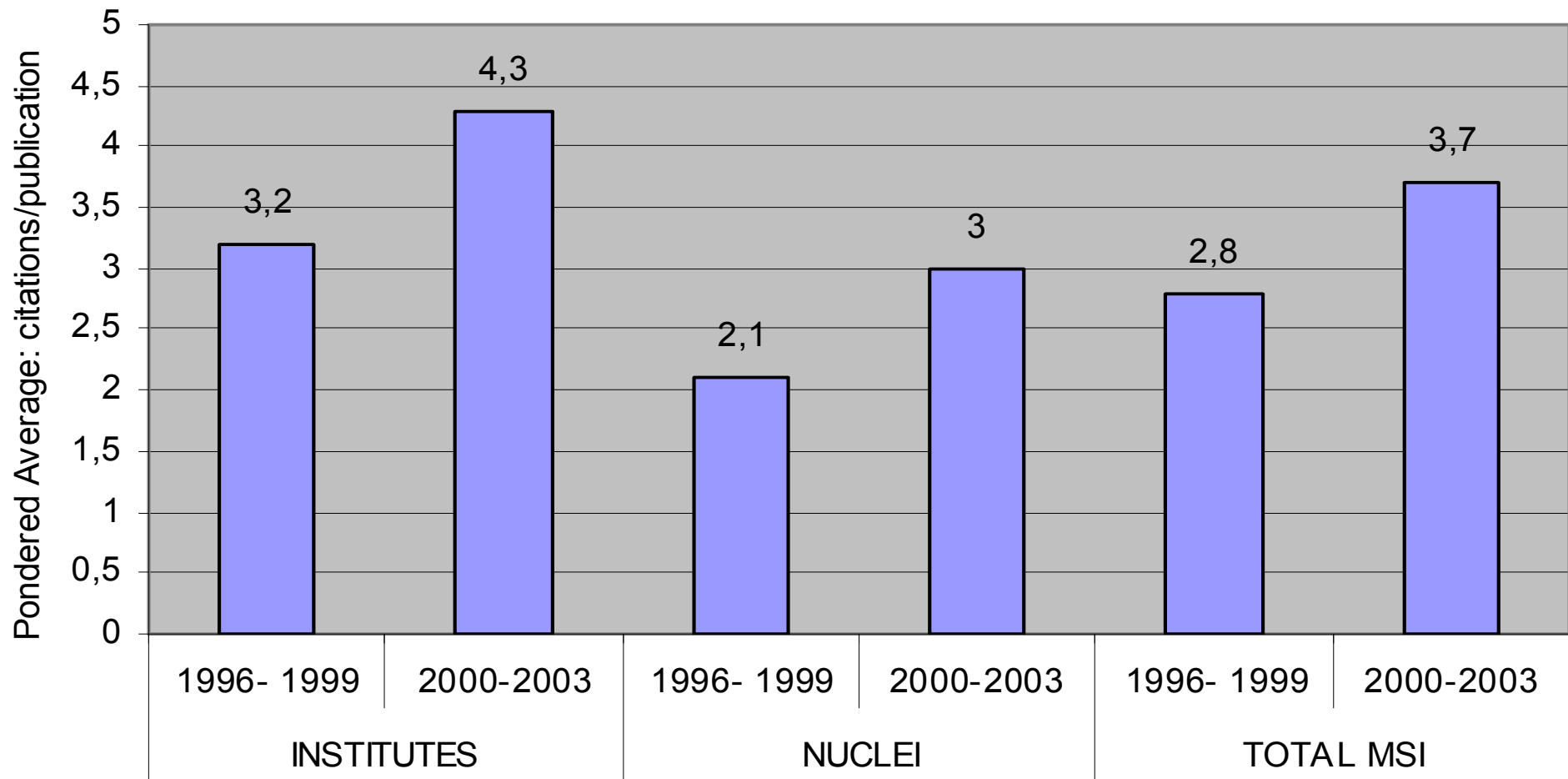
WORLD BANK: “A rigorous base of monitoring and evaluation has been built, which could serve for a better policy in Science and Technology”

SOME ACHIEVEMENTS OF INSTITUTES AND NUCLEI

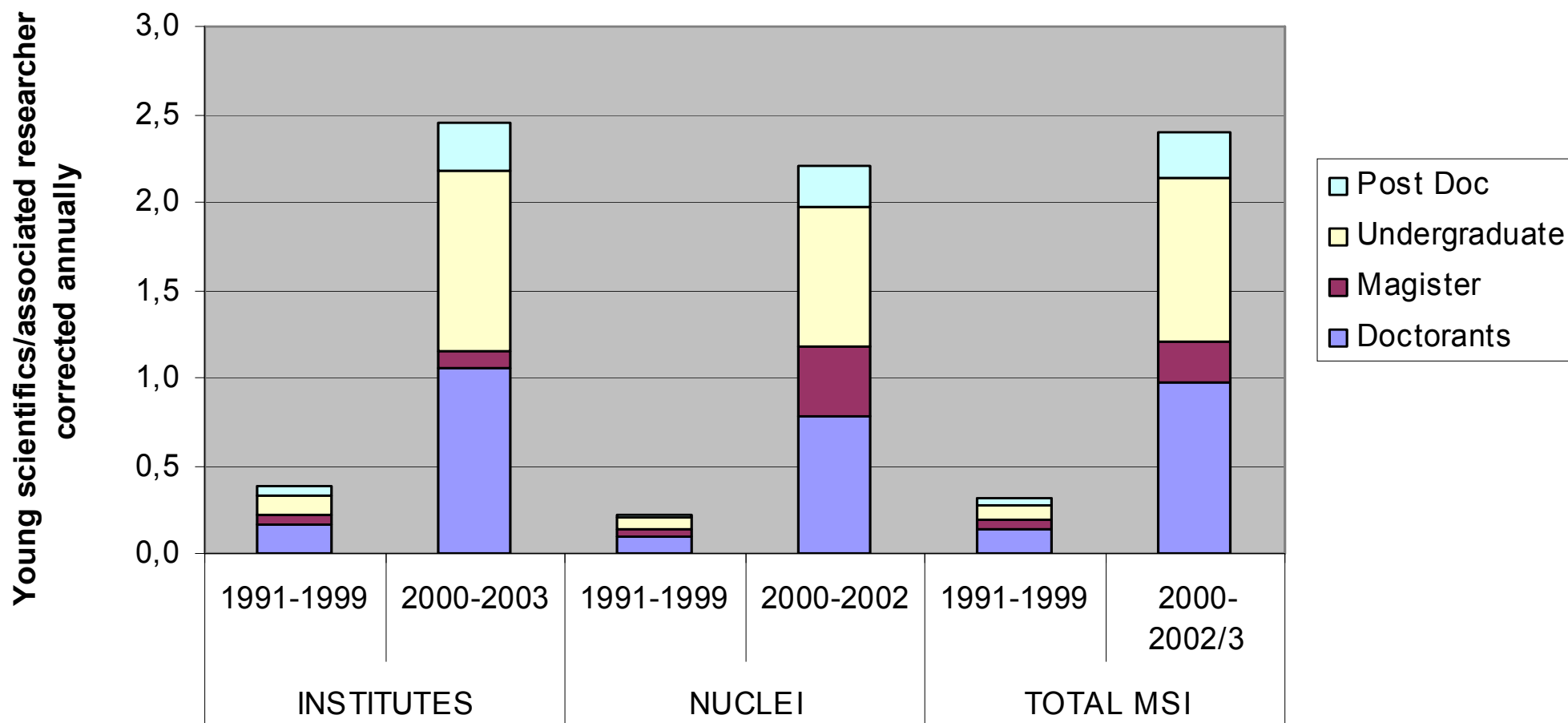
ANNUAL PUBLICATIONS PER ASSOCIATED RESEARCHER: EVOLUTION FOR INSTITUTES, NUCLEI AND TOTAL PROGRAM



Citations per publication: Evolution for Institutes, Nuclei and total program



Participation in the formation of young researchers per Associated Researcher with annual correction: Evolution for Institutes, Nuclei and total program



**WORLD BANK: “FAR THE MOST
RELEVANT SOURCE OF ADVANCED
SCIENTISTS FORMATION IN CHILE”**

- Presentation of papers at National and International Congresses
16 times
- Outreach dedication: 8 times

SOME DISCOVERIES OF WORLD CONNOTATION

24 advances/discoveries reported in 9
disciplines (2003 – 05)

Some examples:

- Medical scanners recovery
- Magnetic signature
- *Piscirickettsia salmonis* vaccinne
- Sismogenetic mechanisms and rupture in earthquakes
- Enzymes for detergents in cold
(All in process of patent)

LINKS WITH INDUSTRY AND EDUCATIONAL AND PUBLIC SECTORS

2002 - 2008:

- **INDUSTRY:** Over 90 activities and projects for the mining, forestry, agricultural, pharmaceutical, information and communication, health, and services sectors
- **EDUCATION:** Over 85 activities of training and research oriented to teachers and students of mid and primary education
- **PUBLIC SECTOR:** Over 40 activities to improve public services and procedures

2 CASES SCIENCE NUCLEI

- L. AMERICAN RESEARCH CENTER FOR YAHOO! RESEARCH
- INTERNATIONAL CENTER FOR RESEARCH IN EARTHQUAKES
(Both in F Ph & M Sci, U. of Chile)

MSI CENTERS

SCIENCE, TECHNOLOGY AND ENGINEERING



IN KEY DEVELOPMENT AREAS:

- Business Management
- Health
- Mining Industry
- Agricultural and Aquatic Genetics
- ICT
- Ecology and Natural Resources
- Energy and Electricity
- Geology and Earthquakes

NETWORKING

- 8 Formal Networks

USD 123,000/year (2008)

OUTREACH

- 77 Activities with industry, public and education sectors

USD 640,000/year (2008)

2007: INTO SOCIAL SCIENCES: Relevant
weakness concerning development and
modernity

- AREAS:
- **SOCIOLOGY**
 - **EDUCATION**
 - **PSYCHOLOGY**
 - **ANTHROPOLOGY**
 - **ARCHAEOLOGY**
 - **ECONOMY**

INTERNATIONAL TRASCENDENCE

- Program Implementation in Mexico, Venezuela and Brazil (2000 – 2001)
- Latin American Association of MSI Programs (Santiago, December 2001)
- Kenya (MSI network Eastern Africa)
- In course: Vietnam, Kazakhstan
- In project: Bangladesh, China