

# ENIP

European Network of  
Indicators Producers

# COUNTRY REPORT

## ISRAEL

*Daphne Getz*



Israel

  
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ENIP - COUNTRY REPORT : ISRAEL

NATIONAL REPORT ON S&T  
DATA / INDICATORS PRODUCTION  
ISRAEL

COUNTRY REPORT BY DAPHNE GETZ,  
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THE SAMUEL NEAMAN INSTITUTE FOR ADVANCED  
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# ENIP - COUNTRY REPORT : ISRAEL

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## ENIP - COUNTRY REPORT : ISRAEL

### LIST OF ACRONYMS

ARO	Agriculture Research Organization
CBS	Central Bureau of Statistics
CHE	Council for Higher Education
CS	Chief Scientist
GBAORD	Government Budget Appropriations or Outlays on R&D
GERD	Gross Expenditure on R&D
IASH	The Israel Academy of Sciences and Humanities
IDF	Israel Defence Forces
ISF	The Israel Science Foundation
MARD	Ministry of Agriculture and Rural Development
MECS	Ministry of Education, Culture & Sport
MITL	Ministry of Industry, Trade & Labour
MST	Ministry of Science and Technology
OCS	Office of The Chief Scientist
PBC	Planning and Budgeting Committee
PNP	Private Non-Profit
SNI	Samuel Neaman Institute
STE	The Science, Technology and Economy programme in SNI

## I. BRIEF PRESENTATION OF THE NATIONAL SYSTEM OF STI

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General features of the Israeli STI system are:

- 3 separate sectors are involved in civilian R&D: the business sector, driven by free market forces; the academic research sector conducting basic research and the governmental R&D, which is dedicated to applied research for the public benefit.
- A large portion of the investment in R&D in Israel has always been in the defence sector. Despite a drastic cut in recent years, the percentage is still very high. However, since the data is classified, this report relates only to civilian R&D.
- In the last ten years more than half of the civilian R&D was performed by the business sector, between 2000 and 2003 that proportion was higher than 70%.
- Israel does not have administrative regions. The government operates centrally, but certain laws or directives relate specifically to certain regions, or certain sectors in the population, for which the government provides financial assistance in the form of capital formation and R&D subsidies.
- The 7 research universities in Israel play a dominant role in the civilian research sector, acting under the law of higher education that secures the legal framework of academic freedom.
- The Israeli government funds almost all higher education institutions in Israel.
- The share of public research laboratories in the Israeli civilian R&D is rather small.

The following chart (Figure 1) presents the organizations involved in research policy and research activities.

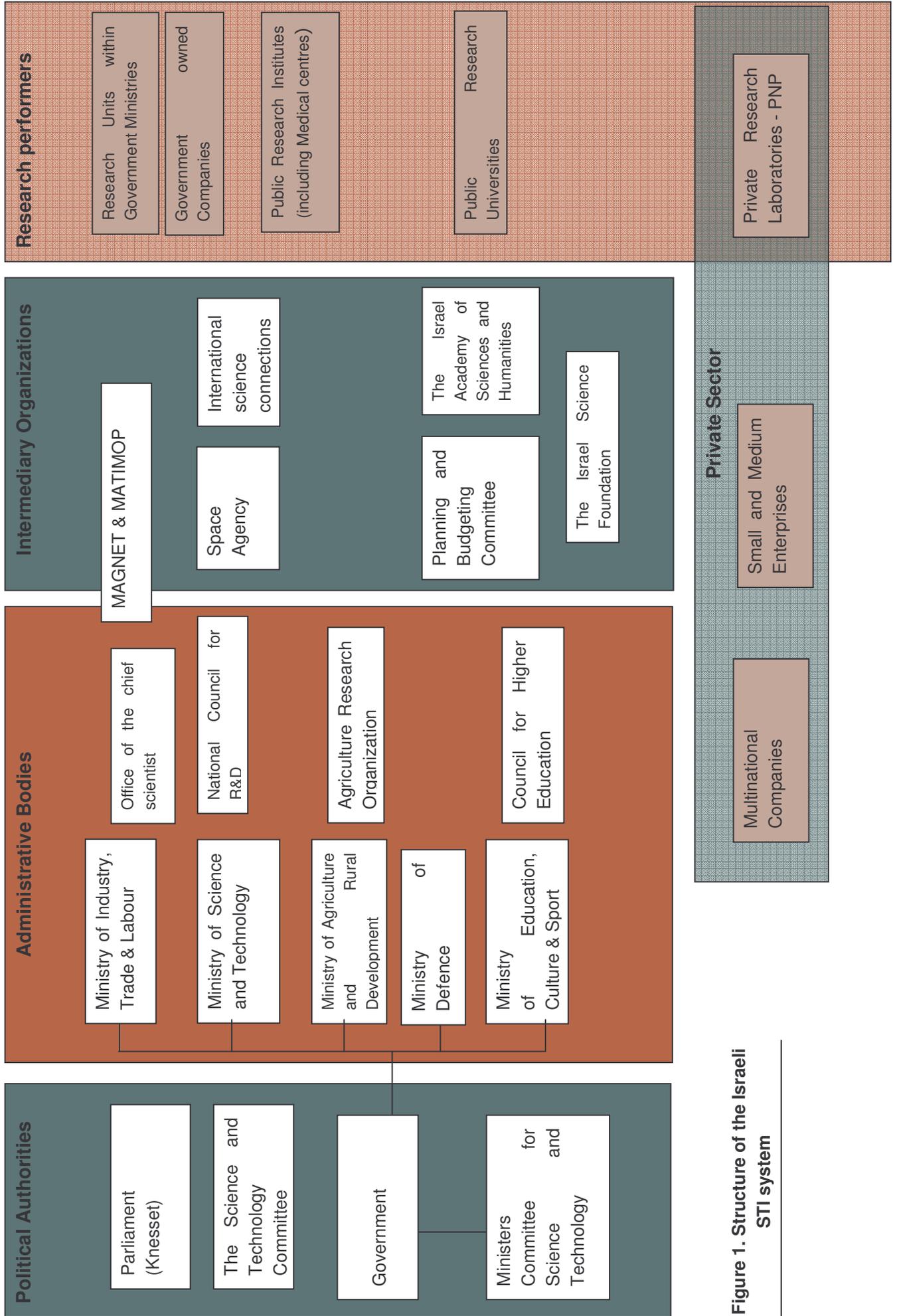


Figure 1. Structure of the Israeli STI system

## I.1. PARLIAMENT - THE KNESSET

Most of the work of the Knesset is performed in the plenum and in the committees.

One of the permanent committees is the Science and Technology Committee that deals with the following issues: Policy on civilian research and development (R&D), advanced technologies, environmental R&D, academic scientific research, non-academic scientific research, research institutes, chief scientists in government offices, research foundations, and information/computer technology.

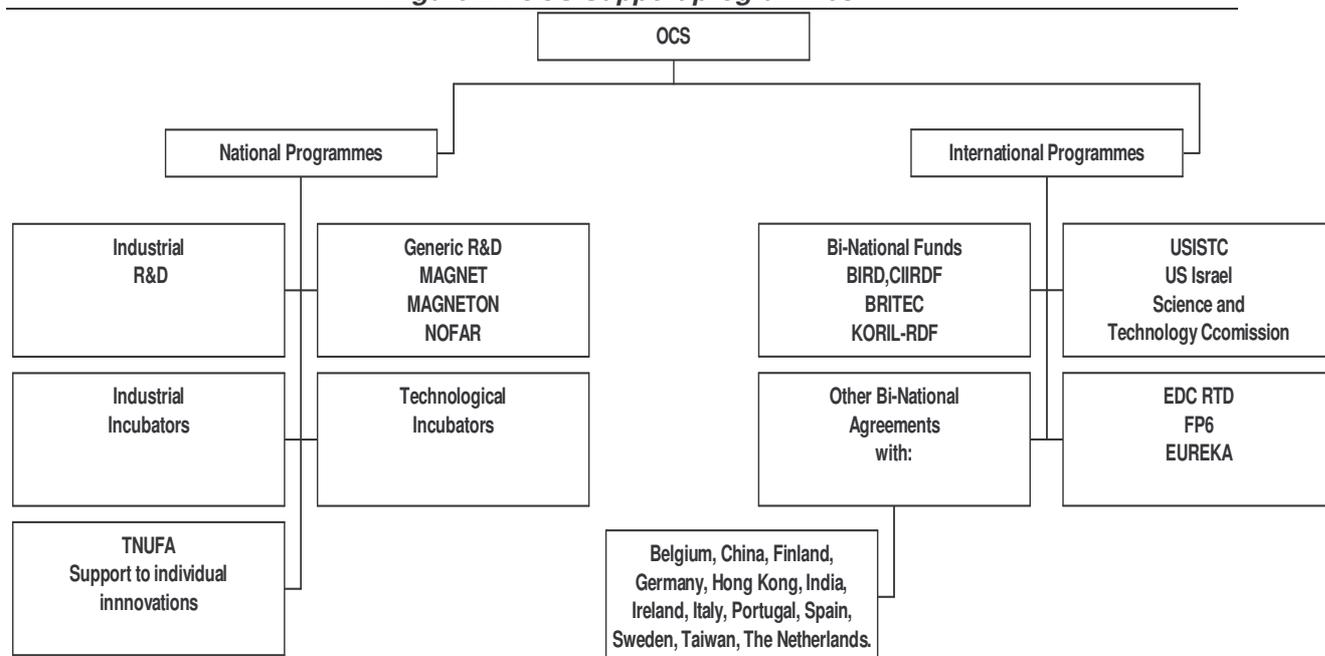
In 1984 The Knesset passed the law for the encouragement of industrial R&D. Under the Law, proposals for R&D projects are awarded grants according to the terms and conditions set by a Research Committee. The purpose of the law is to encourage and support industry in order to enhance the development of local science based industry through utilizing and expanding existing technological and academic infrastructure. Improve Israel's balance of trade by increasing the manufacture and export of high-tech products developed within Israel. The law has been revised several times; the last amendments were legislated in 2002, and another major revision is going to be submitted soon.

## I.2. GOVERNMENT

The government oversees Science & Innovation policy in Israel. All ministries have Chief Scientists who promote R&D issues. The main bodies that finance R&D are the ministries of Industry, Trade & Labour, of Defence, of Agriculture and Rural Development, of Science and Technology and The Council for Higher Education headed by the Minister of Education, Culture & Sport.

**The Office of the Chief Scientist (OCS) of MITL** is responsible for implementing technological R&D programmes both on domestic and international levels. The main national programmes are: grants to industry to encourage R&D, the MAGNET programmes, and technological incubators. In addition, the Ministry promotes international programmes through bi-national funds and bi-national agreements as shown in figure 2.

**Figure 2 : OCS Support programmes**



Source: European commission: enterprise directorate-general, (2003). European trend chart on innovation: country report – Israel, covering period September 2002 August 2003.

<http://trendchart.cordis.lu/CountryPages/index.cfm?fuseaction=CountryList>

## ENIP - COUNTRY REPORT : ISRAEL

**The Ministry of Science & Technology** focuses on:

- Establishing policy and national priorities for science and technology.
- Developing the scientific and technological infrastructure in Israel. Focus is placed on the development of new technologies with commercial and economic potential.
- Developing and maintaining international scientific relations for the promotion of the Israeli science and the international scientific status of Israel.
- Supporting the establishment of research centres including regional R&D centres.
- Consulting the government and its ministries with regard to S&T. The Minister of Science serves as the chairman of the Ministers Committee for Science and Technology in addition to being the chairman of the Forum of Chief Scientists.

**The Ministry of Defence:** The Administration of Research, Weapons Development and Technology Infrastructure serves jointly the Israel Defence Forces (IDF) and the Ministry of Defence, and is responsible for defence R&D in Israel.

**The Ministry of Agriculture and Rural Development (MARD)** is engaged in R&D through **The Agricultural Research Organization (ARO)**, the research arm of MARD which is responsible for planning, organizing and implementing the greater part of Israel's agricultural research effort. ARO is concerned with the solving of current problems in agricultural production, with the introduction of new products, processes and equipment, and with research investigations on which Israel's future agricultural effort will be based

### **The National Council for Research and Development**

The Government appointed the council in July 2004 according to the law for establishment the council (2002). The council plenum includes representatives of government ministries, of the universities, of scientific institutes, of business and industry, and also renowned scientists. Its main tasks include:

- Advice to the government on scientific issues of national importance, particularly those concerning the national scientific infrastructure;
- Scientific guidance for the activities of the Ministry of Science and Technology, particularly with regard to the selection of priority research areas;
- Providing a forum for information exchanges and coordinating the R&D policy of various government and public bodies responsible for promoting R&D.

**The Council for Higher Education** The Council for Higher Education is the state institution in Israel responsible for higher education, including teaching and research. The council operates under the Council for Higher Education Law 1958 and is a statutory body recognized for all obligations, rights and legal action. The council's term of appointment is five years. The council is composed of twenty-five members, headed by the minister of Education Culture and Sport, two-thirds are members from the academy and the remainder are public figures. **The Planning and Budgeting Committee (PBC)** is the executive arm of the council and was established by a decision of the government. It is composed of seven members, four of whom, including the chairman, are of senior academic standing in higher education in various fields; one represents the college sector, and the remaining two are representatives of the public from the fields of industry and economy.

### I.3. INTERMEDIATE LEVEL

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**The MAGNET Programmes of OCS in MITL** support the industrial R&D of generic, pre-competitive technologies in order to establish technological infrastructure of the Israeli industry and to create a cooperative technological reservoir containing a combination of knowledge from the industry and the academic world. The MAGNET rationale is based on two factors: the first is creating critical mass for building common technologies through pooling of resources. The second is efficient exploitation of national resources through technology transfer. The MAGNET programmes represent a significant venue of the government support to industrial R&D through four channels:

- Consortia of industrial firms and academic institutes. Most of the consortia operate for three - five years and have an overall budget of \$ 25 million.
- Magnetron - for the transfer of technology from academia to industry based on dual cooperation.
- User associations for helping with the distribution and implementation of technology.
- Nofar – a new scheme to address academic applied research still in an early stage of its application, in special sectors such as biotechnology.

**MATIMOP** - the Israeli Industry Centre for R&D is a public non-profit organization, founded by the three major associations of manufacturers in Israel. MATIMOP is functioning as the interface between Israeli companies and their international counterparts, to promote joint developments of advanced technologies. It encourages participation in many international programmes for bi-lateral and multilateral cooperation in industrial R&D.

**Technological Incubators**, the programme provides a framework and support for nascent companies to develop their innovative technological ideas and form new business ventures that can attract private investors. Grants are up to 85% of the approved R&D budget with the remainder to be raised by the entrepreneur. Currently there are 24 technological incubators all over the country.

**The Planning and Budgeting Committee (PBC)** of CHE is responsible for the funding and the planning of the HE sector. The PBC is an independent intermediary body between the government and the national institutions, on the one hand, and the institutions of higher education, on the other, regarding all budgetary issues for higher education.

**The Israel Academy of Sciences and Humanities (IASH)** – Established by law of the Knesset in 1961. The Academy's principal objectives are: to enlist as its members distinguished scholars and scientists resident in Israel; to cultivate and promote scholarly and scientific endeavour; to advise the government on activities relating to research and scientific planning of national significance; to maintain contact with parallel bodies abroad, and to ensure the representation of Israeli science at international institutions and conferences.

**The Israel Science Foundation (ISF)** - Israel's predominant source of competitive grants funding for basic research. The ISF awards grants in all fields of exact sciences and technology, life sciences and medicine, humanities and social sciences. The awards are given to researchers at Israeli universities, other centres of higher education, research centres and medical centres. Most of the funds (96%) are provided by the Government of Israel via the PBC.

## **I.4. STI PERFORMERS**

### **I.4.a. The Business Sector**

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According to CBS definitions, the business sector includes establishments and business type units engaged in different kinds of industries (manufacturing, agriculture, software etc.). The source of the increase in national R&D expenditure in Israel during the past years is the business sector. R&D in this sector constitutes more than 70% of overall R&D expenditure during the years 2000-2003. An interesting feature of the business R&D is the major share of ICT sector that spends 23 percent of its GDP on R&D.

Another feature of the sector is that several multi national companies have based part of their R&D units in Israel due to the high quality of human resources.

Most of the companies in Israel are SME`s.

### **I.4.b. The Higher Education Sector**

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Includes seven research universities and research establishments connected with them. The percentage of R&D performed by the HE in Israel out of the total national R&D expenditure has dropped rapidly over the years, especially due to the increase in overall R&D mainly performed by the business sector. In 2003 the HE sector performed 17% of the total civilian R&D.

### **I.4.c. The Governmental Sector**

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Includes government ministries, local authorities, national institutions and PNP institutions financed mainly by the government. The government's share in the R&D performance is relatively small. In 2003 the government performed 6% of the total civilian R&D while it financed 25% of it.

### **I.4.d. PNPs**

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Include organizations that operate on a non-profit basis and their main source of financing is not governmental. This sector performs approximately 4% of all civilian R&D in Israel.

## II. DATA AND INDICATORS

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### II.1. GENERAL REMARKS

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**National expenditures:** Israeli R&D data exists from the early seventies. Until 1987, the Ministry of Science and Technology (MST) prepared general summaries for national expenditure on civilian R&D. From 1989 the Central Bureau of Statistics (CBS) began preparing summaries of national expenditure on R&D. From 1989, summaries were prepared in a different format and are thus non-comparable to previous summaries. The definitions and classifications used by CBS are based on the international recommendations of UNESCO and the OECD's Frascati guide to measuring R&D activities.

Business sector surveys:

- Until 1997 R&D surveys were prepared (by CBS) in manufacturing only. As of 1997 the surveys include the computer and related services industry (software), and the R&D industry, which also includes start-ups, technological incubators, and research institutes (manufacturing+software+R&D as an industry = Business).
- Between the years 1969-1979 R&D surveys in manufacturing were conducted on a census basis.
- Between 1980 and 1984/5, the surveys were sample surveys and covered the entire population of establishments engaged in R&D.
- Between 1985/86 and 1989 sample surveys were conducted and referred only to establishments employing 50 persons or more.
- In 1990, the sources of information about R&D in manufacturing establishments were broadened, and the survey was conducted as a census of all manufacturing establishments employing 5 persons or more

**HE sector:** CBS began preparing summaries on R&D in the universities in 1970. As of 1991, detailed financial data on research that was financed through the regular budgets of the universities are no longer published due to funding cuts at CBS. The same is the case with data on expenditure of separately budgeted research in universities since 1998, which are no longer published. However, aggregated data are published annually by CBS.

General data on HE sector are published in the annual report of the PBC.

## II.2. GENERAL DATA ON COUNTRY

Data/Indicators	Time coverage	Producer	Remarks
GDP	1950-	CBS	Available on the website of CBS- National accounts
Public finances	1950-	CBS	Available on the website of CBS -General government consumption expenditure
Prices / GDP deflator	1951-	CBS	Available on the website of CBS- Statistical Abstract of Israel
PPP	1970-	CBS	Available on the website of CBS
Population/active population	1948-	CBS	Available on the website of CBS

## II.3. FUNDING AND EXPENDITURES

### II. 3. a. OECD R&D expenditures and funding

Data/Indicators	Time coverage	Producer	Remarks
Business R&D exp.	1974-1986*	CBS	Data available at an aggregated level for the business sector.
	1989-	CBS	Data available by type of expenditure.
	1970-	CBS	Survey of manufacturing establishments engaged in R&D. Data on expenditure by aggregated industry and by type of expenditure. As of 1997 the surveys include the computer (software) and R&D industry.
HE R&D exp.	1974-1986*	CBS	Data available at an aggregated level for the HE sector.
	1989-	CBS	Data available by type of expenditure.
	1970-1991	CBS	Data on expenditure by scientific field and institution for selected years in the period 1970-1991.
Government R&D exp. + Public Non-Profit institutions R&D exp.	1974-1986*	CBS	Till 1986 the sector include PNP, public non-profits institutions and government, from 1989 include only the government and public non-profits institutions.
	1989-	CBS	Data available by type of expenditure.
PNP R&D exp.	1989-	CBS	Expenditure by scientific field and type of expenditure
R&D performed abroad, but financed by national sources	1996-	CBS	Data on government ministries' transfers to abroad.

GERD	1974-1986*	CBS	Data on Civilian R&D only
	1989-	CBS	

\*The summaries till 1986 were prepared by the MST and from 1989 were prepared by the CBS in a different format and are incomparable with former summaries

### II. 3. b. Other funding data

Data/Indicators	Time coverage	Producer	Remarks
State expenditures	1989-	CBS	Selected government ministries expenditure on civilian R&D.
Military expenditures		Ministry of Finance	Classified data. Only broad aggregates available in government budgets.
Contract / HE funding	1970-1998	CBS	Data on expenditure on separately budgeted research in universities by scientific field, institution and source of financing, for selected years in the period 1970-1998.
Budgetary data	2000-	Ministry of Finance	National budgets of all ministries and HE are available from 2000 on the ministry website. Data appear in two forms: the original budgets of each section and modified budgets, which are updated from time to time. Data appear in Hebrew.
Indirect funding for enterprises			Tax incentives for R&D - data are not available.
Grants of MITL for industrial R&D	2000-	Ministry of Finance	Data are updated online and appear in Hebrew
Funding by abroad	1989-	CBS	Data available at an aggregated level
GBOARD		CBS	Produced by CBS, available in OECD databases.

### II. 3. c. Project funding

Data/Indicators	Time coverage	Producer	Remarks
Funding basic research by ISF	1973-	ISF	Detailed data on grants and budgets analyses appear in the annual reports of ISF. Until 1992/3 the annual reports were published under the former title of ISF: "Basic Research Foundation of the Israel Academy of Sciences and Humanities". Reports 1-16 were issued only in Hebrew and the budgets were in Israeli currency. Since 1992, (report 17), the budgets are in dollars. The annual reports from 1997 onwards will be published on ISF site.
	1997-	ISF	A Database for ongoing (active) grants: data on individual projects, by programmes, by field and more criteria available at the ISF site. Most of the budgets are in Israeli shekels.

Funding R&D in energy 2000- Ministry of Finance Budgets appear in Hebrew and they are updated online. Detailed data for the 2000-2001 by the ministry of national infrastructures appear on the ministry site include budgets for each research.

## II.4. S&T HUMAN RESOURCES

Data/Indicators	Time coverage	Producer	Remarks
Business R&D personnel.	1969-1996	CBS	Data on employed persons in R&D in manufacturing by type (academic professionals/practical engineers, technicians and others), by industry, by sector, by personal characteristics (age, last degree, vocational training, gender, and more). As of 1997 the employed persons in the industry of R&D and software were added.
HE personnel	1997-1948-1975 1976-	CBS CBS	University academic staff: professors and lecturers by institutes and field of study University staff by type, by degree and by grade. In 2003 a special survey on scientists in universities and research institutes was published in Statistical Abstract of Israel No. 54 (2001) Tables by field of work, by contacts abroad, by post-doctorate studies by degree, by age, by gender and more. University staff by institutes, by type, by degree and by grade.
Government R&D personnel	1979-1998-	PBC The Civil Service Commission	Partial data on civil servants by ministry, by authorized unit, by gender, by age and by grade.
PNP R&D personnel	No data available		
Higher education graduates	1950-	CBS	PhD graduates and other degrees, by gender, age, institution and field of study and more criteria.
Research/education share in universities		CBS	Data exist in university reports but are not published. In higher education institutions, it is difficult to separate R&D from educational activities, and R&D expenditure is not shown separately in the current budget of universities. Therefore, the CBS conducted several surveys, which examined how academic staffs at universities allocate their work time to R&D and teaching.
Educational attainment of the population	1950-	CBS	In statistical abstract of Israel data are published on the educational level of the population aged 15 and over, by type of last school attended, years of schooling, sex,

age, Continent of birth.  
 Series of special publications on: candidates for first-degree studies in universities and series of special publications on students in universities and other institutions of higher education.

## II.5. PUBLICATIONS

Data/Indicators	Time coverage	Producer	Remarks
No. of publications ISI, Co-publications ISI, Citations ISI	1981-	Prof. Gideon Czapski & SNI	Several SNI researches and projects based on the ISI database: Research by Israeli Scientists in Israel and Abroad 1972-1984 (1989). Research Collaborations Between Israeli Researchers and Researchers from Abroad, 1972-1984 (1992). International Status of Israeli Research: A Comparative Analysis Using Scientometric Index 1981-2003 (2004).
Other sources	1976-	Henrietta Szold	The Henrietta Szold Institute has a database with bibliographic data and abstracts in Hebrew of publications and research dealing with education and social science by Israeli researchers and published in Israel and abroad. The database holds information on articles, monographs, research reports, and theses and dissertations. Included are publications in Hebrew and English from 1976 onwards.

## II.6. INNOVATION

### II. 6. a. Patents

Data/Indicators	Time coverage	Producer	Remarks
N. Of patents EU/USA/JPN	1981-2000 1963-2003	OECD USPTO	Patent applications to the EPO (total/ICT/biotechnology sector). Patent granted by the USPTO (ICT & biotechnology sector till 1998).
N. of patents office	1949-	CBS Ministry of Justice	Patent applications for registration in Israel, from Israel and from abroad. In the website of the Ministry of Justice there is a detailed list of patent registration by country.
Patents triadic families	1985-2000	OECD	Number of triadic patent families.

**II. 6. b. Innovation survey**

Data/Indicators	Time coverage	Producer	Remarks
Innovation activities in companies (innovation survey)	1996	CBS	A first, and so far the only survey of innovation in manufacturing, conducted by the CBS in 1997 in attempt to broaden the data obtained from R&D surveys in Israeli manufacturing. The questions that were asked in the survey reflect, apart from R&D activity, other aspects that define the level of innovation in the Israeli manufacturing. Examples for survey data: "The use of patents and innovative equipment" and "The sources for know-how that serves the production activity".
		SNI	A database on start-ups that includes information about all the firms in the portfolio of all the Israeli venture capital funds in 1997-2000 and data on a control group of firms that were supported by Israeli investment companies. The data were used in a research that was published by SNI: "Is Venture Capital Special? Empirical Evidence from a Government Initiated Venture Capital Market" by H. Ber (2002). Data can be available for researchers in SNI.

**II. 6. c. Public-private cooperation and spin-off**

Data/Indicators	Time coverage	Producer	Remarks
Spin-off			Included in Collaboration industry-academia.
Collaboration industry-academia		SNI	Several studies on this topic were conducted in SNI and some publications appear in chapter 3.2.3.

**II.7. PUBLIC UNDERSTANDING OF SCIENCE**

Data/Indicators	Time coverage	Producer	Remarks
Public opinion in Israel on the status of higher education and research universities	1998,2003	SNI and "BASHAAR"	The survey conducted by E. Yaar et al and included a representative sample of Israel adult population.

### III. DESCRIPTION OF MAIN DATA/INDICATORS PRODUCERS

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#### III.1. OVERVIEW

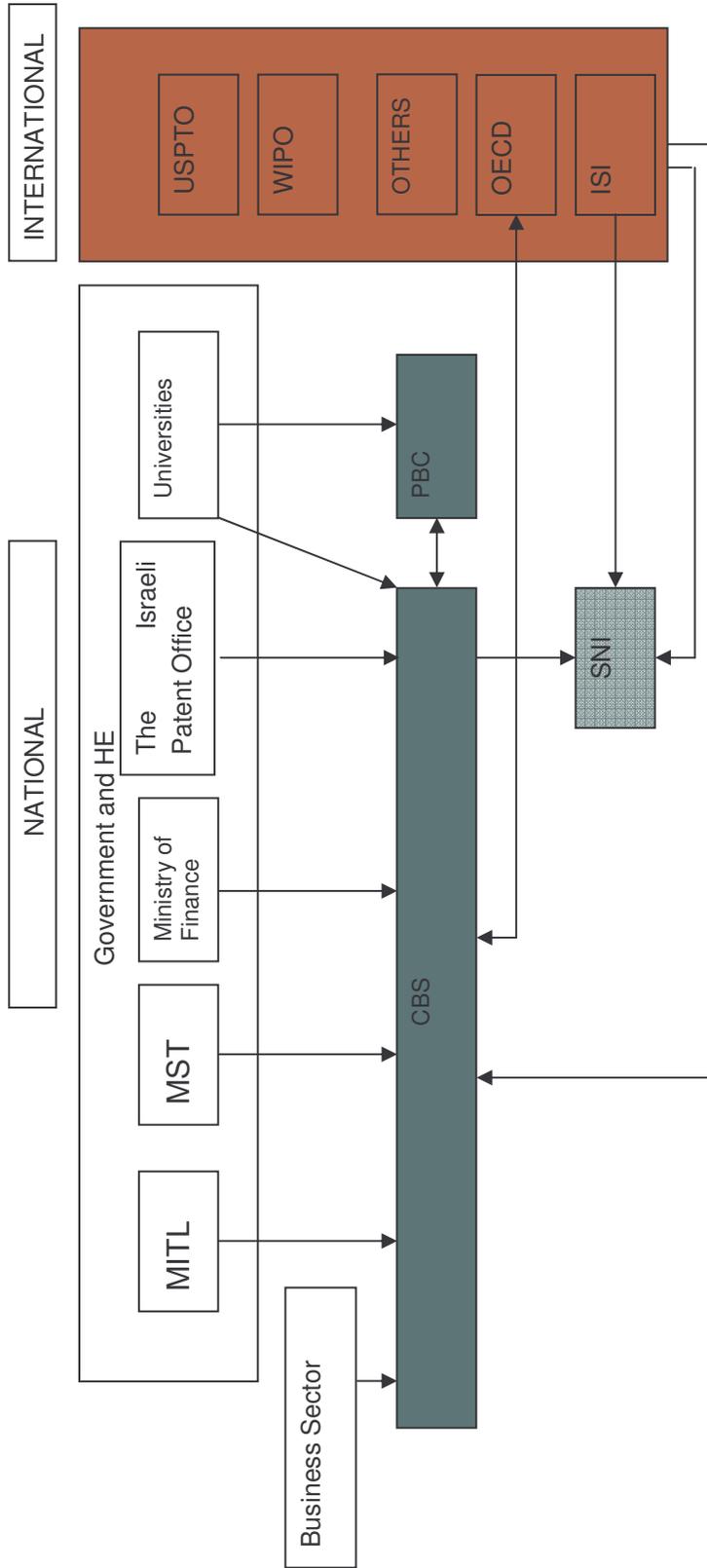
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**Central Bureau of Statistics (CBS):** The majority of the statistical data on Israeli R&D is published by the CBS, which is the main governmental body whose mission is to collect process and publish statistical data on the population, economy and society in Israel. These publications include data on all sectors engaged in R&D (business, government, higher education, and PNP institutes).

**The Planning and Budgeting Committee (PBC)** a subcommittee of the CHE and its executive arm publishes an annual report that includes detailed data on the Israeli higher education system, such as new curricula, university staff, students, infrastructure development as well as the budgets of HE institutions in Israel.

**The Samuel Neaman Institute (SNI):** The SNI established several data centres to support its various activities; one of them is “The Zvi Griliches Research Data Centre”, which aims to promote economic research on R&D, innovation, human capital, commercial productivity and related topics, based on Israeli data. It is a joint operation of the SNI and the CBS. Another database was constructed in the context of research study on the venture capital market on Israel and comprises of all the start-ups in the portfolio of all Israeli venture capital funds in 1997–2000.

Figure 3: National system of R&D data/indicators production



## III.2. INDIVIDUAL DESCRIPTIONS

### III. 2. a. Central Bureau of Statistics

Name	Central Bureau of Statistics
Acronym	CBS
Web site	<a href="http://www.cbs.gov.il">http://www.cbs.gov.il</a>
Description	The CBS is the central body of the government whose role is to collect process and publicize statistical information on the population, the economy and the society in Israel. The work of the CBS is done at a standard, which is internationally accepted by most nations of the world. This enables comparison of statistical information between Israel and other countries.
Activities	Its main work focuses on preparing statistical data - current, monthly, quarterly and annually - on the following subjects: the national economy, the balance of payments and foreign trade, activity of the different industries of the economy, price changes of goods and services, the population, families and their financial and social situation, level of education, health, crime, services supplied to the population by central government and local authorities, and more.
Highlights	Due to the use of scientific methods, the bureau is considered by national institutions and the Israeli and global public to be very reliable.
Main publications	Statistical abstract of Israel. National expenditure on civilian R&D. Survey of R&D in the business sector. Recipients of degrees from universities and other higher education institutions (unavailable online). Monthly bulletin of prices

### III. 2. b. The Council for Higher Education in Israel and the PBC

Name	The Council for Higher Education in Israel and the PBC
Acronym	CHE-PBC
Web site	<a href="http://www.che.org.il">http://www.che.org.il</a>
Description	The Council for Higher Education is the state institution in Israel responsible for higher education, including teaching and research. The council operates under the Council for Higher Education Law (1958) and is a statutory body recognized for all obligations, rights and legal action. The PBC (Planning and Budgeting Committee) is the executive arm of the council and was established by a decision of the government. It is responsible for funding and planning the HE sector.
Activities of PBC	The functions of the PBC, as delegated to it by the CHE and supported by government decision are: To propose the regular budget and the development budget for HE; To have exclusive authority for disbursing the global authorized budgets to the institutions for HE; To propose to the government and the CHE plans for the development of HE, including their financing; To promote efficiency in the institutions of HE and to coordinate among them;

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	To oversee the use of the allotments, in order to prevent deficits or excesses; To express its opinion to the CHE on the opening of any new institution or new unit with significant financial ramifications at an accredited institution.
Highlights	The CHE is responsible for the budget of the universities and it holds all the relevant data on university research but not all of the data is open to the public.
Main publications	Planning and Budgeting Committee – Annual Reports 1-29

### III. 2. c. Samuel Neaman Institute

Name	Samuel Neaman Institute
Acronym	SNI
Web site	<a href="http://www.neaman.org.il/">http://www.neaman.org.il/</a>
Description	The Samuel Neaman Institute for Advanced Studies in Science and Technology is an independent public-policy research institute, established in 1978 to assist in the search for solutions to national problems in science and technology, education, economy and industry, and social development.
Activities	<p>The Science, Technology and Economy (STE) Programme is a core programme aimed at developing national policy alternatives in the fields of science, technology and economics. This is a novel programme in several ways:</p> <p>It cuts across university boundaries, trying to bring under one roof the best researchers in the field.</p> <p>It is an attempt to harness the vast economic and technical knowledge of the team and apply it to practical policy issues.</p> <p>It is meant to educate a cadre of young policy research scholars for Israel.</p> <p>It will help place the Neaman Institute and the Technion at the centre of national policy making</p> <p>Working Papers Series, comprising the end results of the STE projects.</p>
Highlights	<p>The SNI established several data centres to support its various activities; one of them is “The Zvi Griliches Research Data Centre”. Its mission is to promote economic research on R&amp;D, Innovation, Human Capital, Firm Productivity and related topics, based on Israeli data. The centre is a part of the activity of the group of researchers on STE, within the framework of the SNI in cooperation with the CBS.</p> <p>Another database is on start-ups, it includes information about all the firms in the portfolio of all the Israeli venture capital funds in 1997–2000.</p>
Selected publications	<p>“R&amp;D Policy in Israel: An Overview and Reassessment”, M. Trajtenberg, 2000.</p> <p>Analysis and Policy Recommendations for Technology Transfer from Universities to Industry. Final Report”, D. Shefer, A. Frenkel, SNI, 2003.</p> <p>Is Venture Capital Special? Empirical Evidence from a Government Initiated Venture Capital Market”, H. Ber, 2002.</p> <p>“R&amp;D, Firm Size and Innovation: An Empirical Analysis”. A. Frenkel, S. Maital and D. Shefer, 2001.</p> <p>“Spatial Diffusion of Industrial Innovation and Regional Development” A. Frenkel, D. Shefer and others, 1998 (in Hebrew).</p>

## IV. OVERALL ASSESSMENT

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The main producer of STI data is the Central Bureau of Statistics (CBS) that supplies reliable and comparable data on civilian R&D. As a whole, the STI statistical system is well organized in periodical series that are published regularly.

The R&D indicators on the business sector R&D are fully covered. Indicators on government, higher education and non-profit organizations sectors are also available in aggregated levels as produced by the CBS. More data are available in the PBC publications.

Human resources in the higher education sector are well covered in several aspects: HE personnel, HE graduates and educational attainment of the population.

However, data on the governmental personnel as well as PNPs are not available.

The information on project funding and on innovation is not published regularly and do not stand yet up to the criteria of governmental transparency; some indicators on project funding can be found in budgetary data and in ministries reports. Several ministries have their own databases that can be available for researchers. Thus, information on project funding and innovation indicators, need further examination on new sources for statistical data.

## V. REFERENCES

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### V.1. GENERAL REFERENCES

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- The website of CBS (<http://www.cbs.gov.il>)
- The website of CHE-PBC (<http://www.che.org.il>)
- The website of IASH (<http://www.academy.ac.il>)
- The website of ISF (<http://www.isf.org.il>)
- The website of the Israel Government Gateway (<http://www.info.gov.il/>)
- The website of the Knesset (<http://knesset.gov.il>)
- The website of MAGNET (<http://www.magnet.org.il>)
- The website of MATIMOP (<http://www2.matimop.org.il>)
- The website of Ministry of Agriculture and Rural Development (<http://www.agri.gov.il>)
- The website of Ministry of Defence (<http://www.mod.gov.il>)
- The website of Ministry of Justice - The Israeli Patent Office (<http://www.justice.gov.il/MOJEng/RashamPatentim/>)
- The website of Ministry of Finance (<http://www.mof.gov.il>)
- The website of Ministry of National Infrastructures (<http://www.mni.gov.il/>)
- The website of MITL (<http://www.tamas.gov.il>)
- The website of MST (<http://www.most.gov.il>)
- European commission: enterprise directorate-general, (2003). European trend chart on innovation: country report – Israel, covering period September 2002 August 2003. <http://trendchart.cordis.lu/CountryPages/index.cfm?fuseaction=CountryList>
- Getz, D. and Kahane, B., (2003). User involvement in R&D consortia: Israel as a showcase. Haifa, Samuel Neaman Institute. <http://neaman.org.il/publications/publications.asp>
- Teldan P., (Ed), (2002), Report of the chief scientists of governmental ministries, 2001 (in Hebrew). Jerusalem: The Ministry of Science and Technology. [http://www.most.gov.il/index.php/node\\_59/node\\_106/node\\_385/2001](http://www.most.gov.il/index.php/node_59/node_106/node_385/2001)
- OECD (2004). Main science and technology indicators. <http://hermia.sourceoecd.org/vl=884193/cl=72/nw=1/rpsv/home.htm>

### V.2. DATA AND INDICATORS REFERENCES

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#### CBS Publications:

- Business research and development - series of special publications
- Candidates for first-degree studies in universities - series of special publications
- Information and Communications Technologies (ICT) Sector 1990-2000
- Inputs in research and developments in universities - series of special publications
- National Expenditure on Civilian R&D - series of special publications
- R&D in manufacturing - series of special publications

## ENIP - COUNTRY REPORT : ISRAEL

- R&D in the Business sector - series of special publications
- Recipients of degrees from universities and other higher education institutions sector - series of special publications
- Statistical abstract of Israel
- Students in universities and other institutions - series of special publications
- Survey of R&D in manufacturing 1996, innovation survey in manufacturing, 1997.

### **PBC publications:**

- Annual Reports published every year since 1979, in Hebrew.
- The higher education system in Israel – trends and developments: statistical reports. (In Hebrew)

### **Other publications:**

- The Civil Service Commission: <http://www.civil-service.gov.il>
- Henrietta Szold Institute: <http://www.szold.org.il/>
- Yaar E., et al (2003). The status of higher education and research universities in the eyes of Israeli public. Bashaar - Academic Community for Israeli Society (in Hebrew). [http://www.bashaar.org.il/index\\_eng.asp](http://www.bashaar.org.il/index_eng.asp)



The ENIP project is to create a Network of S&T Indicators Producers, based on the experience of recognised institutions, labs or groups, and to develop the capacity for the interpretation of existing indicators and for the research and development of new ones. The ENIP project is producing through its action a comparison analysis between a significant number of European countries, identify European partners where action is needed and areas of further action. This will contribute for a more thorough knowledge of available data and new indicators development necessary to strengthen the comparability of data across Europe and the interaction between the relevant actors. This is essential to build a long term European Network of Indicators Producers.

This document is a National Report which first presents briefly the national structure of R&D in the country surveyed; the following parts are composed of :

- a list of the national S&T-related databases as well as their availability,
- a description of the national structure of S&T indicators production,
- a brief description of the main Data/Indicators producers.

In the first ENIP phase, the following reports are published :

- Austria, *Michael Dinges*, Joanneum Research - Institute of Technology and Regional Policy - InTeReg
- France, *Jean Thèves, Laurence Esterle*, Observatoire des sciences et des techniques (OST)
- Germany, *Rainer Frietsch*, Fraunhofer Institute Systems and Innovation Research
- Hungary, *Annamária Inzelt*, IKU Innovation Research Centre
- Israel, *Daphne Getz*, The Samuel Neaman Institute for Advanced Studies in Science and Technology
- Italy, *Bianca Poti, Emanuela Reale*, CNR CERIS
- Norway, *Stig Slipersæter, Anders Ekeland*, NIFU STEP
- Portugal, *Luisa Henriques, Tiago Santos Pereira*, CISEP / CES
- Spain, *Isabel Gómez, Luis Sanz-Menéndez*, Consejo Superior de Investigaciones Científicas (CSIC)
- Switzerland, *Benedetto Lepori*, Università della Svizzera Italiana (UNISI)

An extension to all European countries is foreseen.

[www.enip-europe.org](http://www.enip-europe.org)

