

Review of Scientific Research in Iraq

Status and future perspectives

Annexes I and II

Questionnaire form and tables derived from responses received from
research centres and units

Annex (I)

Research and Development in Iraq's Institutions of Higher Education and Research Centres

Questionnaire

This questionnaire is aimed at obtaining information on the activities of institutions engaged in research and development (R&D) in Iraq. It is presently targeted at a selection of universities, research centres and specialised laboratories active in R&D, with emphasis on priorities linked to sustainable socioeconomic development. Please see table 7 below.

Information provided in completed forms by target institutions will be compiled and analysed with view to drawing up national R&D strategies, including future R&D funding and support modalities at the national level.

Part I. General Information, Human and Financial Resources

A. General Information.

1. Institution's official name:¹

English	Arabic

2. Year of establishment:

3. Official Name of the Organization to which the Institution is affiliated:²

4. Address and Contact Information.

Table 1. Address and contact information	
Postal Address	
City	
P. O. Box	
E-mail address	
Website	
Phone number	00964 -

5. Name and contact details of authorized focal person.

Table 2. Focal person's contact details		
Name		
Official function		
Phone numbers	Land line	00964 -
	Mobile	00964 -
E-mail address		

¹ The term "Institution" is used here to denote all types of organizations, including research centres, units or service facilities involved in R&D activities. Some of the items included in this questionnaire are also directed at institutions providing support to R&D groups, such as testing, standardisation, calibration and quality control facilities.

² This field should include the official name of the parent organization, e.g. university, ministry, government organization, regional or international organization or agency.

B. Human Resources

1. Number of full-time staff members across academic qualifications, gender and nationality.

Table 3. permanent staff members in 2008 across academic qualifications, gender and nationality.						
	Permanent Staff in 31/12/2008					
	Iraqi		Non-Iraqi		Total	
	M	F	M	F	M	F
Ph.D.						
Masters Degree						
B.Sc. and diploma holders *						
Vocational training diploma						
Total						
* For the purposes of the present questionnaire B.Sc. and 3-4 year diploma holders are grouped within the same category.						

2. Number and distribution of staff members across fields of specialization, academic qualifications and gender in the natural sciences, engineering and various technology disciplines.

Table 4. Distribution of staff members across fields of specialization in the Natural Sciences, and Engineering and Technology						
Fields of Specialization	Ph.D.		Masters Degree		B.Sc. and Diploma	
	M	F	M	F	M	F
1. Physical sciences						
2. Chemical sciences						
3. Biological sciences and biotechnology						
4. Earth sciences						
5. Information and communications technology						
6. Engineering sciences						
7. Agricultural sciences*						
8. Aquaculture and Marine Sciences						
9. Medical and health sciences						
10. Environmental sciences						
11. Water and waste management technology †						
12. Material sciences and technologies						
* Including forestry and related sciences and technologies.						
‡ Including fisheries and related disciplines.						
† Including water desalination technologies.						

Part II; Research and Development Activity
(R&D activities, outcomes and plans)

1. R&D activities undertaken during 2005-2010 and those planned or ongoing in 2011.

Table 5. Ongoing and Completed and Planned R&D Projects³			
	R&D Projects		
	Completed during 2005-2010*	Ongoing in 2011	Planned for 2012
Basic Research			
Pure or fundamental scientific research			
Directed basic research			
Applied Research			
Field studies and research			
Other (please specify).			

2. Output of R&D projects and related activities undertaken by the Centre/Unit.

Table 6. Output of R&D projects and related activities undertaken by the Institution during the period 2005 - 2010.			
		No.	Domain or Discipline
I	Publications		
	1. Books published during the period 2005-2010		
	2. Papers published in international refereed journals during the period 2005-2010		
	3. Papers published in non-refereed journals during the period 2005-2010		
II	Patents	No.	Domain or Discipline
	Patents registered by the Institution during the period 2005-2010		

3. R&D cooperation with national, regional and international organizations/institutions.

Please provide information below on R&D activities undertaken by the Institution in cooperation with, or in implementation of contractual agreements for, other organizations/institutions within or outside Iraq.

Kindly indicate the number and percentage of such activities, in relation to the total number of activities undertaken by the Institution and provide a brief description thereof, including information about concerned parties, the type of R&D activity undertaken, and outcomes attained, as indicated below.

³ This table should list the number and cost of R&D projects and activities completed within the five year period 2005-2010. Completed R&D projects and activities should be entered only once against a category that best describes their nature or content.

Table 7. R&D activities implemented in cooperation with national and international institutions			
A. National universities or research centres			
Number of projects/activities undertaken		Percentage of total	
Names of universities and research centres with which R&D cooperation took place			
-			
-			
Brief outline of projects/activities undertaken and R&D domains covered:			
B. Government ministries and other public sector institutions			
Number of projects/activities undertaken		Percentage of total	
Names of government ministries and other public sector institutions with which R&D cooperation took place			
-			
-			
Brief outline of projects/activities undertaken and R&D domains covered:			
C. International organizations or agencies*			
Number of projects/activities undertaken		Percentage of total	
Names of regional and international organizations or agencies with which R&D cooperation took place			
-			
-			
Brief outline of projects undertaken including principal outcomes/achievements:			
* Please include cooperative activities undertaken in liaison with universities and other relevant institutions in the region, i.e. with neighbouring countries and regional organizations.			

Part III. Resources and Expenditure

1. Please complete the following table with information on financial resources made available to the Institution during 2010.

Table 8. Financial resources available during 2010	
Source of Finance	Value in USD (thousands)
1. Government funds	
2. Funding by national donors *	
3. Contributions made through overseas programmes	
5. International donations, grants or loans ‡	
Other sources of finance (indicate below)	
Total	
* Donations by individuals and enterprises.	
‡ Please include grants and loans made available through pan-Arab or other regional donors or lenders.	

2. Please complete table (9) with information on financial expenditures made by the Institution during the past academic year.

Table 9. Salaries, wages, fees and capital expenditures.	
Expenditure Items	Value in USD (thousands)
1. Salaries, wages	
2. Consultancy fees	
3. Operational expenses*	
4. Capital Investment (fixed assets)†	
5. Capital Investment (non-fixed assets)‡	
Total	
* Includes spare parts, maintenance and purchase of consumables.	
† Includes land, buildings and construction.	
‡ Includes purchase and rental of equipment, machinery, instrumentation etc..	

3. Please provide a brief description of the sort of information and communications technology facilities available for the Institutions activities, emphasizing links to the Internet as well as intranets available to research and support staff.

Table 10. Information and Communications Technology Facilities.	
Expenditure Items	
1. Total number of PCs and Laptops	
2. Ratio of PCs/Laptops to research staff	
3. Bandwidth available for linking to the Internet	
4. Availability of Intranet networking	
5. Average annual expenditure allocated to ICT facilities over the period 2005-2010 ‡	
* Includes spare parts, maintenance and purchase of consumables.	
† Includes land, buildings and construction.	
‡ Allocations in USD (thousands).	

4. Are available ICT facilities judged adequate for present purposes? Please tick as appropriate, then kindly qualify your response in the space provided below.

Yes		No	
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Part IV; Obstacles to R&D Activity and Suggestions for Improvement


1. Obstacles encountered in the design, planning and implementation of R&D projects/activities and exploitation of their outcomes

Using ranking key given below, please rate obstacles encountered in the design, planning and implementation of R&D projects/activities and exploitation of subsequent outcomes against each type of obstacle/problem.

High	5	Considerable	4	Medium	3	Low	2	Not an obstacle	1
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Table 11. Obstacles encountered in the design, planning and implementation of R&D projects/activities and exploitation of their outcomes		
	Obstacle	Rank
I.	Management policies often result in:	
I.1	poorly defined priorities	
I.2	uneven distribution of human resources	
I.3	uneven distribution of financial resources	
I.4	insufficient incentives	
I.5	inefficient dissemination of information	
I.6	Too much time taken up by administrative tasks	
II.	Inadequate number of:	
II.1	specialists in crucial areas	
II.2	Technicians	
II.3	university graduates	
II.4	higher level staff	
II.5	support and administrative staff	
III.	Inadequate training for researchers	
IV.	Inadequate initial training for support staff	
V.	Consistently inadequate financial resources for	
V.1	The entire Centre/Unit	
V.2	selected projects/disciplines within the Centre/Unit	
VI.	Inadequate access to information through:	
VI.1	conventional means, e.g. periodicals, reference material, etc.	
VI.2	Databases and other ICT based resources on the web	
VII.	Shortages in:	
VII.1	Physical infrastructure	
VII.2	Crucial laboratory equipment items	
VII.3	ICT facilities (e.g. PCs, laptops, limited access to the web, ...)	
VIII.	Inadequate coordination and cooperation with	
VIII.1	other R&D Centres/Units and national universities/institutes of higher education	
VIII.2	relevant international organizations	
IX.	Others obstacles/difficulties (please specify below)	

2. Please use the space provided below to outline ideas that might enhance the quality, outcome and utility of R&D activities already implemented.

A large, empty rectangular box with a thin black border, intended for the respondent to write their ideas for enhancing R&D activities.

Annex (II)

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Annex (II)

A-Research centres and units, their affiliations and years of establishment

Table (Annex II-A1); Research Centres and Institutions at selected universities in Iraq	
<i>University of</i>	<i>Research Centre/Unit, Institute</i>
<i>Al Anbar</i>	<i>Desert Studies Unit (College of Agriculture)</i>
<i>Al Nahrain</i>	<i>International Law Studies Centre</i>
	<i>Biotechnology</i>
<i>Babylon</i>	<i>Environment Protection Centre</i>
	<i>Psychological Research Centre</i>
<i>Baghdad</i>	<i>Embryology Research Centre</i>
	<i>Genetic Engineering and Biotechnology Institute</i>
	<i>Postgraduate Institute for Urban and Regional Planning</i>
	<i>Postgraduate Institute for Laser Studies</i>
<i>Basra</i>	<i>Marine Science Centre</i>
	<i>Date Palm Research Centre⁴</i>
	<i>Polymer Research Centre</i>
	<i>Persian Studies</i>
	<i>Gulf Studies</i>
<i>Mosul</i>	<i>Agriculture Research Centre</i>
	<i>Economics Research Centre</i>
	<i>Environment Research Centre</i>
	<i>Remote Sensing Centre</i>
	<i>Mosul Studies Research Centre</i>
	<i>Turkish Studies Research Centre</i>
	<i>Dams and Water Resource Research Centre</i>
	<i>Computer Engineering Centre</i>
<i>Al Mustansiriya</i>	<i>National Diabetes Centre</i>
	<i>National Haematology Centre</i>
	<i>Higher Institute for Political and International Studies</i>
	<i>Arab Homeland Centre</i>
	<i>Institute for Teaching Arabic to Foreigners</i>
<i>MoHESR</i>	<i>Commission for Computers and Informatics (ICCI)</i>
	<i>Informatics Institute for Postgraduate Studies</i>
<i>Source: "Iraq Education in Transition: Needs and Challenges;" Published by UNESCO, Paris in , 2004.</i>	

⁴ Iraq has a fairly long history as one of the main exporters of dates in the region. Around 120 varieties are reportedly being cultivated. Thus, research on date palm agriculture is considered a priority.

Research Centre	University	Year
Centre of Revival of Arabian Science Heritage	Baghdad University	1977
Marine Science Centre	Basra University	1980
Marine Science Centre	Basra University	1980
Regional Studies Centre	Mosul University	1985
Remote Sensing Centre	Mosul University	1985
Dams and Water Resources Research Centre	Mosul University	1986
Medical Research Unit	Al Nahrain University	1989
Mosul Studies Centre	Mosul University	1992
Kufa Studies Centre	University of Kufa	1992
Date Palm Research Unit	Baghdad University	1995
Iraqi Centre for Cancer and Medical Genetics Research	Al Mustansiriyah University	1995
Polymer Research Centre	Basra University	1995
Middle Euphrates Unit for Cancer Researches	...	1995
Applied Sciences Research Unit	University of Technology	1996
Hemoglobinopathy Unit	Basra university	1996
Environment and Pollution Control Researches Centre	Mosul University	1997
Market Research and Consumer Protection Centre	Baghdad University	1997
National Diabetes Centre	Al Mustansiriyah University	1997
Unit of researches and Medical Appliances Replacements	College of Health and Medical Technology	1997
Medical Appliances and Replacements Research Unit	...	1997
Corn Research Unit	Ministry of Higher Education	1998
Biotechnology Research Centre[2]	Al Nahrain University	1999
Remote Sensing Unit	Baghdad University	1999
Biological unit for Tropical Diseases[3]	Baghdad University	2001
Salahuddin Alayubi Centre for Historical and Cultural Studies	Tikrit University	2002
Research Unit for Die Desgin and Manufacture	University of Technology	2002
Energy and Fuel Research Centre	University of Technology	2004
Environmental Research Centre	University of Technology	2004
Marshes Research Centre	Thi-Qar University	2004
Dohuk Research Centre	University of Dohuk	2004
Childhood and Motherhood Research Centre	Diyala University	2005
Quality Research Unit	Foundation of Technical Education	2005
Zoonotic Diseases Researches Unit	Al Qadisiya University	2005
Environmental Research Unit	Kirkuk University	2005
Clinical Zoonotic Diseases Research Unit	Baghdad University	2006
Economic Research Unit	Baghdad University	2006
Environmental Pollution Research Unit	Basra Technical Institute	2007
Spatial Research Unit	University of Diyala	2007
General Directorat of Research Centre	University of Salahuddine	2007
Alternate and Renewable Energy Research Unit	Technical College-Najaf	2010
Breast and Cervical Cancer Research Unit	Baghdad University	2010
Renewable Energies Research Unit	Commission of Technical Education	2010
Geographic Information Systems and Remote Sensing Unit	Thi-Qar University	2011
Research and rehabilitation information centre	...	2011
Al Mostansiriyah Centre for Arab and International Studies	Al Mustansiriyah University	N/A
Cell and biotechnology research unit	Basra University	N/A
Educational Unit for Peace Studies	Educational College, Baghdad	N/A
Nanotechnology and Advanced Materials Research Centre	University of Technology	N/A

Annex (II)

B. Human Resources in Research

Table (Annex II-B1); Human resource profiles reported by all responding institution.

	Research institution	Total Staff (M)	Total Staff (F)	Researchers (M)	Researchers (F)	B.Sc & above (M)	B.Sc & above (F)
1	Al Mostansiriyah Centre for Arab and International Studies	23	25	21	17	22	22
2	Alternate and Renewable Energy Research Unit	8	-	3	-	6	-
3	Applied Sciences Research Unit	3	3	-	-	2	2
4	Biological unit for Tropical Diseases ⁵	5	12	4	7	5	12
5	Biomathematics Unit	6	8	2	3	3	4
6	Biotechnology Research Centre ⁶	48	41	26	17	43	34
7	Breast and Cervical Cancer Research Unit	2	9	1	3	2	7
8	Cell and biotechnology research unit	4	5	3	5	3	6
9	Centre of Revival of Arabian Science Heritage	32	52	14	24	21	37
10	Childhood and Motherhood Research Centre	9	7	5	5	7	7
11	Clinical Zoonotic Diseases Research Unit	1	1	1	-	1	1
12	Corn Research Unit	3	-	3	-	3	-
13	Dams and Water Resources Research Centre	29	11	20	3	25	6
14	Date Palm Research Unit	2	3	1	2	-	1 ⁷
15	Dohuk Research Centre	5	9	5	1	5	1
16	Economic Research Unit	2	4	2	3	2	3
17	Educational Unit for Peace Studies	1	3	-	-	1	3
18	Energy and Fuel Research Centre	23	4	17	2	20	3
19	Environment and Pollution Control Researches Centre	8	12	5	4	6	9
20	Environmental Pollution Research Unit	5	2	5	1	5	1
21	Environmental Research Centre	13	12	9	2	12	10
22	Environmental Research Unit (Kirkuk U.)		2	-	1		1
23	General Directorate of Research Centre (SUH)	8	4	-	-	6	2
24	Geographic Information Systems and Remote Sensing Unit	-	7	-	-	-	6
25	Hemoglobinopathy Unit	2	6	2	2	2	5
26	Iraqi Centre for Cancer and Medical Genetics Research	42	41	11	11	19	32
27	Kufa Studies Centre	49	9	13	-	23	2
28	Marine Science Centre	202	142	88	33	153	101
29	Market Research and Consumer Protection Centre	30	21	14	9 ⁸	22	14
30	Marshes Research Centre	36	17	-	-	21	13
31	Medical Research Unit	6	15	3	7	3	12
32	Medical Appliances and Replacements Research Unit	3	5	3	4	3	5
33	Medical Research Unit (Al Nahrain College of Medicine)	6	15	3	7	3	12
34	Middle Euphrates Unit for Cancer Researches	2	6	2	3	2	4
35	Mosul Studies Centre	10	15	7	7	9	12
36	Nanotechnology and Advanced Materials Research Centre	9	4	-	-	-	-
37	National Diabetes Centre	20	38	7	6	4	24
38	Polymer Research Centre	26	7	15	3	24	3
39	Quality Research Unit		2		1		2
40	Regional Studies Centre	22	13	19	6	22	7
41	Remote Sensing Centre (Mosul U.)	29	11	20	3	24	10
42	Remote Sensing Unit (Baghdad U.)	7	4	7	3	7	3
43	Renewable Energies Research Unit	9	-	6	-	8	-
44	Research and rehabilitation information centre	-	-	-	-	-	-
45	Research Unit for Die Desgin and Manufacture	5	-	2	-	5	-
44	Salahuddin Alayubi Centre for Historical & Cultural Studies	29	4	20	4	19	4
45	Spatial Research Unit	2	5	1	3	1	5
46	Unit of researches and Medical Appliances Replacements	3	5	3	4	3	5
47	Zoonotic Diseases Researches Unit	6	4	-	-	6	4

⁵ Apparent problems detected in tables 5 and 6.

⁶ Disparity is apparent in tables 4 and 6 regarding number of total staff members.

⁷ Need to check this entry as the table refers to permanent staff while the number of staff with qualifications above the B. Sc. degree would be expected to exceed just one female staff member. The difference may be due to higher degree students not counted as permanent staff?

⁸ Including one non-Iraqi researcher.

Table (Annex II-B2); Total number of employees, researchers and staff members with qualifications higher than the BSc degree at responding Iraqi institutions active in applied scientific research						
	Total Staff (M)	Total Staff (F)	Researchers (M)	Researchers (F)	B. Sc. And above (M)	B. Sc. And above (F)
Date Palm Research Unit	2	3	1	2	-	1 ⁹
Corn Research Unit	3	-	3	-	3	-
Quality Research Unit		2	-	1		2
Cell and biotechnology research unit	4	5	3	5	3	6
Biotechnology Research Centre ¹⁰	48	41	26	17	43	34
Renewable Energies Research Unit	9	-	6	-	8	-
Energy and Fuel Research Centre	23	4	17	2	20	3
Applied Sciences Research Unit	3	3	-	-	2	2
Polymer Research Centre	26	7	15	3	24	3
Alternate and Renewable Energy Research Unit	8	-	3	-	6	-
Environmental Research Centre	13	12	9	2	12	10
Environment and Pollution Control Researches Centre	8	12	5	4	6	9
Environmental Pollution Research Unit	5	2	5	1	5	1
Marshes Research Centre	36	17	-	-	21	13
Geographic Information Systems and Remote Sensing Unit	-	7	-	-	-	6
Dams and Water Resources Research Centre	29	11	20	3	25	6
Remote Sensing Centre	29	11	20	3	24	10
Remote Sensing Unit	7	4	7	3	7	3

Table (Annex II-B3); Total number of employees, researchers and staff members with qualifications higher than the BSc degree at responding Iraqi institutions active in medical and healthcare research						
	Total Staff (M)	Total Staff (F)	Researchers (M)	Researchers (F)	B. Sc. And above (M)	B. Sc. And above (F)
Unit of researches and Medical Appliances Replacements	3	5	3	4	3	5
Iraqi Centre for Cancer and Medical Genetics Research	42	41	11	11	19	32
Hemoglobinopathy Unit	2	6	2	2	2	5
National Diabetes Centre	20	38	7	6	4	24
Childhood and Motherhood Research Centre	9	7	5	5	7	7
Clinical Zoonotic Diseases Research Unit	1	1	1	-	1	1
Zoonotic Diseases Researches Unit	6	4	-	-	6	4
Medical Research Unit	6	15	3	7	3	12
Breast and Cervical Cancer Research Unit	2	9	1	3	2	7
Biological unit for Tropical Diseases ¹¹	5	12	4	7	5	12

⁹ Need to check this entry as the table refers to permanent staff while the number of staff with qualifications above the B. Sc. degree would be expected to exceed just one female staff member. The difference may be due to higher degree students not counted as permanent staff?

¹⁰ Disparity is apparent in tables 4 and 6 regarding number of total staff members.

¹¹ Apparent problems detected in tables 5 and 6.

Table (Annex II-B4); Total number of employees, researchers and staff members with qualifications higher than the BSc degree at responding Iraqi institutions active in applied scientific research						
	Total Staff (M)	Total Staff (F)	Researchers (M)	Researchers (F)	B. Sc. And above (M)	B. Sc. And above (F)
Market Research and Consumer Protection Centre	30	21	14	9 ¹²	22	14
Mosul Studies Centre	10	15	7	7	9	12
Al Mostansiriyah Centre for Arab and International Studies	23	25	21	17	22	22
Educational Unit for Peace Studies	1	3	-	-	1	3
Salahuddin Alayubi Centre for Historical and Cultural Studies	29	4	20	4	19	4
Economic Research Unit	2	4	2	3	2	3
Centre of Revival of Arabian Science Heritage	32	52	14	24	21	37

Table (Annex II-B5); Total number of employees, researchers and staff members with qualifications higher than the BSc degree at responding Iraqi institutions active in research targeting local and regional development						
Local and Regional Development Centres	Total Staff (M)	Total Staff (F)	Researchers (M)	Researchers (F)	B. Sc. And above (M)	B. Sc. And above (F)
Regional Studies Centre	22	13	19	6	22	7
Spatial Research Unit	2	5	1	3	1	5
Centre of Revival of Arabian Science Heritage	32	52	14	24	21	37

¹² Including one non-Iraqi researcher.

Annex (II)

C. Financial Resources: allocations and expenditure

Table (Annex II-C1); Budgetary allocations made to, and expenditures by, research institutions ¹³			
	Institutions	Allocations	Expenditures
1	Al Mostansiriyah Centre for Arab and International Studies	269,100	-
2	Alternate and Renewable Energy Research Unit	-	-
3	Biological unit for Tropical Diseases	-	-
4	Biomathematics Unit	-	-
5	Biotechnology Research Centre	-	-
6	Breast & Cervical Cancer Research Unit	150,000	45,000
7	Cell and Biotechnology Research Unit (Basra University)	17,000	-
8	Centre for Revival of Arabian Science Heritage	-	-
9	Centre For International Studies	-	-
10	Childhood and Motherhood Research Centre	-	-
11	Clinical zoonotic diseases research unit	24,000	-
12	Corn Research Unit	-	-
13	Dams and water resources research centre	-	?
14	Date Palm Research Unit	20,000	-
15	Dohuk Research Centre	-	-
16	Economic Research Unit (Baghdad University)	-	-
17	Energy and fuel research centre	24,000	-
18	Environment and Pollution Control Researches Centre – Mosul U.	289,000	295,250
19	Environmental Pollution Research Unit	-	-
20	Environmental Research Centre	410,000	-
21	Environmental Research Unit/College of Science/Kirkuk Univ.	-	-
22	General Directorate of Research Centre / University of Salahaddin	-	-
23	Hemoglobinopathy Unit	-	-
24	Iraqi Centre for Cancer and Medical Genetics Research	400,000	-
25	Kufa Studies Centre	346,000	-
26	Marine Science Centre	6,134,145	8,348,866
27	Market Research and Consumer Protection Centre	14,200	-
28	Marshes Research Centre	-	-
29	Medical Appliances and Replacements Research Unit	0	0
30	Medical research unit/ Al-Nahrain College of Medicine	4,000	-
31	Middle Euphrates Unit for Cancer Researches	150,000	150,000
32	Middle Euphrates Unit for Cancer Researches	-	-
33	Mosul Studies Centre	36,250	-
34	Nanotechnology and Advanced Materials Research Centre	-	-
35	National Diabetes Centre	123,000	-

¹³ From tables (8) and (9) in the questionnaire form.

36	Polymer Research Centre	96,000	-
37	Polymer Research Unit	-	-
38	Quality Research Unit	-	-
39	Regional Studies Centre	12,000	-
40	Remote Sensing Centre, Mosul University	4,166,000	257,530
41	Remote Sensing Centre, Mosul University	-	-
42	Remote Sensing Unit (Baghdad University)	58,000	-
43	Renewable Energies Research Unit	-	-
44	Research and rehabilitation information centre	-	-
45	Research Unit for Die Design and Manufacture	50,000	50,000
46	Research Unit for Die Design and Manufacture	-	-
47	Salahuddin Al Ayubi Centre for Historical and Cultural Studies	9,000	-
48	Spatial Studies Centre	-	-
49	Unit of Geographic Information Systems and Remote Sensing	-	28,000

Table (Annex II-C2); Annual budgetary allocations to institutions active in medical and life sciences research		
1	Breast and Cervical Cancer Research Unit	150,000
2	Cell and Biotechnology Research Unit (Basra University)	17,000
3	Clinical zoonotic diseases research unit	24,000
4	National Diabetes Centre	123,000
5	Iraqi Centre for Cancer and Medical Genetics Research	400,000
6	Medical research unit/ Al Nahrain College of Medicine	4,000
7	Middle Euphrates Unit for Cancer Researches	150,000
	Total (Medical and life sciences)	868,000

Table (Annex II-C3); Annual budgetary allocations to institutions active in applied sciences research		
1	Remote Sensing Centre, Mosul University	4,166,000
2	Remote Sensing Unit (Baghdad University)	58,000
3	Research Unit for Die Design and Manufacture	50,000
4	Date Palm Research Unit	20,000
5	Polymer Research Centre	96,000
	Total	4,390,000

Table (Annex II-C4); Annual budgetary allocations to institutions active in social sciences and humanities research		
1	Al Mostansiriyah Centre for Arab and International Studies	269,100
2	Salahuddin Alayubi Centre for Historical and Cultural Studies	9,000
3	Regional Studies Centre	12,000
4	Mosul Studies Centre	36,250
5	Kufa Studies Centre	346,000
6	Market Research and Consumer Protection Centre	14,200
	Total (Social sciences and humanities)	686,550

Table (Annex II-C5); Annual budgetary allocations to institutions active in energy and environmental research		
1	Energy and fuel research centre	24,000
2	Environment and Pollution Control Researches Centre – Mosul U.	289,000
3	Environmental Research Centre	410,000
4	Marine Science Centre	6,134,145
	Total (Energy and environment)	6,857,145

Annex (II)

D. Research Outcomes; books, papers, patents and prizes

Table (Annex II-D1); Published books and papers as well as prizes awarded to responding research institutions in the energy sector over the years 2005-2010				
Research fields/disciplines	Research output			Prizes
	Books	Papers I	Papers II	
Renewable Energies Research Unit	-	-	-	-
Energy and Fuel Research Centre	-	6	67	-
Alternate and Renewable Energy Research Unit	-	1	-	-
Totals	-	7	67	-

Table (Annex II-D2); Published books and papers as well as prizes awarded to responding research institutions in agriculture and allied areas over the years 2005-2010				
Research fields/disciplines	Research output			Prizes
	Books	Papers I	Papers II	
Date Palm Research Unit	-	15	6	-
Corn Research Unit	-	6	-	-
Marshes Research Centre	-	-	-	-
Dams and water resources research centre	-	109	-	-
Totals	-	130	6	-

Table (Annex II-D3); Published books and papers as well as prizes awarded to responding research institutions in biotechnology over the years 2005-2010				
Research fields/disciplines	Research output			Prizes
	Books	Papers I	Papers II	
Cell and biotechnology research unit	-	3	11	-
Biotechnology Research Centre ¹⁴	-	-	-	-
Biomathematics Unit	-	-	-	-
Totals	-	3	11	-

Table (Annex II-D4); Published books and papers as well as prizes awarded to responding research institutions in fields related to the environment over the years 2005-2010				
Research fields/disciplines	Research output			Prizes
	Books	Papers I	Papers II	
Environmental Research Centre	-	10	43	-
Environment and Pollution Control Researches Centre	1	10	30	-
Environmental Pollution Research Unit	-	6	6	-
Environmental Research Unit (Kirkuk)	1 ¹⁵	-	-	-
Marine Sciences Centre	-	50	10	-
Total	2	76	89	-

Table (Annex II-D5); Published books and papers as well as prizes awarded to responding research institutions in selected areas of applied science over the years 2005-2010				
Research fields/disciplines	Research output			Prizes
	Books	Papers I	Papers II	
Quality Research Unit	-	5	-	-
Research Unit for Die Design and Manufacture	-	8	-	1
Polymer Research Centre	-	5	21	1
Research and rehabilitation information centre	-	-	-	-
Nanotechnology and Advanced Materials Research Centre ¹⁶	2	13	88	-
Applied Sciences Research Unit	-	4	20	-
Dohuk Research Centre ¹⁷	-	17	30	-
General Directorate of Research Centre	-	-	-	-
Totals	2	52	159	2

¹⁴ Claim for 6 patents registered during 2005-2010.

¹⁵ Questionnaire form refers to the publication of a journal.

¹⁶ Questionnaire form refers to one patents registered during 2005-2010.

¹⁷ Questionnaire form refers to one patents registered during 2005-2010.

Table (Annex II-D6); Published books and papers as well as prizes awarded to responding research institutions in selected areas of GIS and remote sensing over the years 2005-2010				
Research fields/disciplines	Research output			Prizes
	Books	Papers I	Papers II	
Remote Sensing Centre	2	11	57	-
Remote Sensing Unit	-	15	100	- ¹⁸
Geographic Information Systems and Remote Sensing Unit	1	-	5	-
Totals	3	26	162	-

Table (Annex II-D7); Published books and papers as well as prizes awarded to responding research institutions in selected areas of medicine and healthcare over the years 2005-2010				
Research fields/disciplines	Research output			Prizes
	Books	Papers I	Papers II	
Unit of researches and Medical Appliances Replacements	1	-	-	8
Iraqi Centre for Cancer and Medical Genetics Research ¹⁹	3	63	-	7
Hemoglobinopathy Unit	-	4	-	-
National Diabetes Centre	-	-	20	-
Childhood and Motherhood Research Centre	89	-	59	-
Clinical Zoonotic Diseases Research Unit	-	-	1	-
Zoonotic Diseases Researches Unit	-	2	-	-
Medical Research Unit (Al Nahrain) ²⁰	-	5	30	-
Breast and Cervical Cancer Research Unit	-	2	1	-
Biological unit for Tropical Diseases ²¹	-	-	5	-
Middle Euphrates Unit for Cancer Research	-	7	3	-
Breast & Cervical Cancer Research Unit	-	1	2	3
Totals	93	84	121	18

Table (Annex II-D8); Published books and papers as well as prizes awarded to responding research institutions in selected areas of local and regional development over the years 2005-2010				
Research fields/disciplines	Research output			Prizes
	Books	Papers I	Papers II	
Regional Studies Centre ²²	32	11	-	10
Spatial Research Unit ²³	3	-	10	-
Centre of Revival of Arabian Science Heritage	-	-	-	-
Kufa Studies Centre	3	-	206	-
Totals	38	11	216	10

Table (Annex II-D9); Published books and papers as well as prizes awarded to responding research institutions in selected areas of economics and humanities over the years 2005-2010				
Research fields/disciplines	Research output			Prizes
	Books	Papers I	Papers II	
Market Research and Consumer Protection Centre	64	77	-	2
Mosul Studies Centre	17	-	50	1
Al Mostansiriyah Centre for Arab and International Studies ²⁴	70	-	-	-
Educational Unit for Peace Studies	-	-	-	-
Salahuddin Alayubi Centre for Historical and Cultural Studies	-	-	-	-
Economic Research Unit	-	14	13	-
Centre For International Studies	75	133	54	-
Totals	226	224	117	3

¹⁸ Questionnaire form refers to fellowships and audit reports instead of actual prizes.

¹⁹ Claim made by this Centre for six patents.

²⁰ Two questionnaires appear to have been received from this centre with different figures for output 6 refereed and 12 un-refereed articles in one and 5 refereed and 30 un-refereed articles in another. The higher figures were entered here.

²¹ Apparent problems detected in tables 5 and 6.

²² Claim made by this Centre for 443 registered patents.

²³ Claim made by this Centre for three registered patents.

²⁴ Claim made by this Centre for 497 registered patents.

Annex (II)

E. Research Cooperation with Domestic and International Partners

Table (Annex II-E1); Research activities implemented in cooperation with national universities				
	No. of projects	Percentage of total	Iraqi universities	Comments
Cell and Biotechnology Research Unit	5	-	Thee Qar university Meesan university	-
Date Palm Research Unit	-	-	-	-
Corn Research Unit	-	-	-	-
Quality Research Unit	-	-	-	-
Biotechnology Research Centre	-	-	-Baghdad University -Al-Razi for Biological Kits, Iraqi Centre for Cancer and Medical Genetics, Centre for Embriological Researches and infertility treatment	-
Renewable Energies Research Unit	-	-	-	-
Biological unit for Tropical Diseases	-	-	-	-
Biomathematics Unit	1	5	-	-
Centre For International Studies	-	-	-	-
Environmental research unit (Kirkuk Univ.)	-	-	-	-
Marshes Research Centre	-	-	-	-
Nanotechnology and Advanced Materials Research Centre	-	-	Universities of Kufa, Basrh, Kerbala, Baghdad, AL-Nahrain, AL-Mustasiriya and Technology.	Brief outline of projects / activities undertaken and R&D domains covered: See appendix(1) We intend to solve the problems of the students of high studies as well as finish their researches in the specific time during a number of training courses which are arranged at our centre.
Polymer Research Unit	-	-	-	-
Breast & Cervical Cancer Research Unit	-	-	All Universities across all Iraqi provinces.	Focal representatives in medical colleges belonging to Iraqi Province Universities. Specifically with Kufa Erbil and Basra Universities.
Research Unit for Die Design and Manufacture	2	25	Alanbar Technical Institute	-
General Directorate of Research Centre (SUH)	-	-	Hawler Medical Univ.	-
Dohuk Research Centre	-	-	Erbil Medical Research Centre/Erbil University Ministry of Agriculture/Kurdistan Region /Iraq/Erbil	Feb 2007 Technical workshop 'Molecular Diagnostic tools Jan 2009 National Technical workshop /Iraq/Erbil. Education
Remote Sensing Centre, Mosul University	-	-	-	-
Dams and water resources research Centre	-	-	-	-
Research and rehabilitation information Centre	-	-	-	-
Kufa studies Centre	-	-	-	-
Middle Euphrates Unit for Cancer Researches	-	-	-	-

Table (Annex II-E2); Research activities implemented in cooperation with Iraqi government ministries and departments				
	No. of projects	Percentage of total	Other domestic partners	Comments
Cell and Biotechnology Research Unit	-	-	-	-
Date Palm Research Unit	-	30	State Board of Date Palm, Ministry of Agriculture.	Comparative studies of field performance in date palm in vitro and in vivo plants (ongoing) Effect of some plant growth regulators on enhance salinity tolerance in date palm south of Iraq (ongoing)
Corn Research Unit	-	-	-	-
Quality Research Unit	-	-	-	-
Biotechnology Research Centre	-	-	-ministry of Technology and Sciences -Ministry of Health -Ministry of Environment - ministry of Agriculture	-
Renewable Energies Research Unit	-	-	-	-
Biological unit for Tropical Diseases	3	3	Ministry of Technological Science Ministry of Agriculture	-
Biomathematics Unit	-	-	-	-
Centre For International Studies	Not sure	-	- Ministry of Higher Education & Scientific Research - Ministry of Foreign affairs, Ministry of Defence	-
Environmental research unit (Kirkuk Univ.)	-	-	-	-
Marshes Research Centre	1	0.5	Marshes Restoration Centre	-
Nanotechnology and Advanced Materials Research Centre			Ministry of health e.g., diseases detection. Ministry of Environmental e.g., water contaminants detection. Ministry of Higher education and scientific research e.g., scientific research in genetic engineering. Communications e.g., remote sensing of airborne viruses and bacteria	-
Polymer Research Unit	4	80	Ministry of industry and mineral Scientific Research Foundation- Petrochemical research centre	-
Breast & Cervical Cancer Research Unit	-	-	Ministry of Health Ministry of Environment Ministry of Science & Technology Ministry of Social Affairs	-
Research Unit for Die Design and Manufacture	-	-	-	-
General Directorate of Research Centre (SUH)	-	-	Ministries of Health and Municipalities General Directory Of Museum	-
Dohuk Research Centre		-	Central veterinary Laboratory, Ministry of Agriculture Ministry of higher Education Kurdistan Regional Government, Erbil, Iraq	-
Remote Sensing Centre, Mosul University	2	100	Nineveh investment commission, Nineveh Geology organization.	-
Dams and water resources research Centre	-	-	-	-
Research and rehabilitation information Centre	-	-	-	-
Kufa studies Centre	-	-	-	-
Middle Euphrates Unit for Cancer Researches	-	-	-	-

Table (Annex II-E3); Research activities implemented in cooperation with international partners				
	No. of projects	Percentage of total	Intl. partners	Comments
Cell and Biotechnology Research Unit	1	-	Heriot watt university, UK Pavia university, Italy	Multilocus sequence typing of staphylococcus aureus isolates identified by 16s rRNA gene sequencing Training course in cell culture.
Date Palm Research Unit	-	40	The International Centre for Agricultural research in the Dry Areas (ICARDA), Aleppo, Syria	Molecular characterization of Iraqi date palm cultivars using DNA molecular markers In this project over 100 date palm cultivars has been characterized from 2009-2010 Establishment of new date palm gene bank of Iraqi date palm cultivars this project over 120 date palm cultivars DNA stock has been isolated and stored under freezing in 2010 Developing over 1000 microsatellite markers (SSR) across date palm genome (published)
Corn Research Unit	-	-	-	-
Quality Research Unit	-	-	-	-
Biotechnology Research Centre	-	-	-	-
Renewable Energies Research Unit	0	0	-	-
Biological unit for Tropical Diseases	-	-	-	-
Biomathematics Unit	-	-	-	-
Centre For International Studies	Not sure	-	Centre for Arab Unity Studies, Emirates Centre For Studies and Strategic Research. Amman centre For Human Rights, Centre of Iraq For studies. Centre For Human Rights, Bait Al Hikma, Centre of Iraq For Studies.	-
Environmental research unit (Kirkuk Univ.)	-	-	-	-
Marshes Research Centre	3	1	Suggest (?) UNDP	A Survey on Demographical , Economical and Social conditions of People of Iraqi Marshes.
Nanotechnology and Advanced Materials Research Centre	-	-	-	-
Polymer Research Unit	1	20	The Arab Science and Technology Foundation/ Dubai	Removal of Cr(VI), Ni(II) and Cd(II) from aqueous solution using agricultural wastes. The project is completed and I plan to publish 3 papers in refereed journals.
Breast & Cervical Cancer Research Unit			King Hussain Cancer Centre/Jordan Lebanese Cancer Society / Lebanon National Cancer Institute / Egypt	Comparative studies on the behaviour of breast cancer in patients inhabiting selected countries in the Middle East (Iraq, Lebanon, Jordan & Egypt); including demographic characteristics, clinic-pathological presentation & treatment outcomes.
Research Unit for Die Design and Manufacture	-	-	-	-
General Directorate of Research Centre (SUH)			ICARDA SCRI Rosemasterd (?) Research Centre	Ongoing Plan will be undertaken.
Dohuk Research Centre	-	-	Borstel Research Centre-Germany . Pendik veterinary control Research Centre, Turkey. Lanzhou Veterinary Res. Centre, China	-
Remote Sensing Centre, Mosul University	-	-	-	-
Dams and water resources research Centre	-	-	-	-
Research and rehabilitation information Centre	-	-	-	-
Kufa studies Centre	-	-	-	-
Middle Euphrates Unit for Cancer Researches	-	-	-	-

Table (Annex II-E4); Outline of cooperation activities undertaken by Iraqi research institutions with national universities, ministries and government departments, international organisations and overseas universities			
	National universities	Ministries and government departments	International organisations and overseas universities
Cell and Biotechnology Research Unit	Yes	-	Yes
Date Palm Research Unit	-	Yes	Yes
Biotechnology Research Centre	Yes	-	-
Biological unit for Tropical Diseases	-	Yes	-
Biomathematics Unit	Yes	-	-
Centre For International Studies	-	Yes	Yes
Marshes Research Centre	-	Yes	-
Nanotechnology and Advanced Materials Research Centre	Yes	-	-
Polymer Research Unit	-	Yes	Yes
Breast & Cervical Cancer Research Unit	Yes	Yes	Yes
Research Unit for Die Design and Manufacture	Yes	Yes	-
General Directorate of Research Centre (SUH)	Yes	Yes	Yes
Dohuk Research Centre	Yes	-	Yes
Remote Sensing Centre, Mosul University	-	Yes	-
Dams and water resources research Centre	-	Yes	-
Research and rehabilitation information Centre	-	Yes	-

Annex (II)

F. Obstacles Facing Research Activities

Table (Annex II-F1); Average scores awarded by responding institutions over all obstacle categories.

		I. Management policies	II. Critical mass	III. Initial training	IV. Further training	V. Budgetary resource	VI. Access to information	VII. Infrastructure	VIII. Cooperation & Coordination
1	Alternate and Renewable Energy Research Unit	4.5	4.8	5	5	5	5	5	5
2	Applied Sciences Research Unit	3.5	4.8	5	5	4.5	2.5	3.7	4
3	Biological unit for Tropical Diseases	3.5	3	2	2	1.5	1.5	2	1.5
4	Biomathematics Unit	2	3	2.7	2.7	2.5	2.5	2.3	1
5	Breast and Cervical Cancer Research Unit	2.7	2.6	2.3	3.3	2.5	1.5	2	1
6	Cancer and Medical Genetics Research	3.8	4.4	4.3	5	5	4.5	4.3	5
7	Cell and biotechnology research unit	4.2	3.2	4.3	4	4	4.5	5	4.7
8	Centre for Arab & International Studies	3.3	2.4	3.7	3.7	4.5	4	3.7	2
9	Centre For International Studies	2.2	2.8	2.3	2.3	2.5	2	2.3	2
10	Centre of Revival of Arabian Science Heritage	3.3	3	3	3.7	3	3	4.3	3
11	Clinical Zoonotic Diseases Res. Unit	2.8	2.2	5	4	5	4	4.7	4.5
12	Corn Research Unit	1	3	1	1	4	1	1	1.3
13	Dams and Water Resources Research Centre	3.3	3.4	4	3.3	3.5	4	3.3	4
14	Date Palm Research Unit	3.7	2.8	4.3	4	4	4.5	5	4.7
15	Dohuk Research Centre	3.7	3	2	2	3	5	3.3	4.5
16	Economic Research Unit	4	4.4	5	3.7	5	3	3.3	4
17	Educational Unit for Peace Studies	3	4.4	5	5	5	4.5	5	3.5
18	Energy and Fuel Research Centre	3	3	2.7	3	3	3.5	2.7	4
19	Environment and Pollution Control Researches Centre	3.2	3.6	5	5	4.5	3.5	3	5
20	Environmental Pollution Research Unit	2.8	2.4	1.7	1	1	1.5	1.3	2
21	Environmental Research Centre	3.8	2.2	2.3	3	4	4	3	4
22	Environmental Research Unit (Kirkuk Univ.)	5	4.8	5	5	4	4	4	4
23	General Directorate of Research Centre (SUH)	1.3	4.6	5	5	4.5	5	4.7	4.5
24	GIS and Remote Sensing Unit	2.2	3.4	3	3	5	5	5	4
25	Hemo-globino-pathy Unit	4.2	3.2	4.3	4	4	4.5	5	3.5
26	Kufa Studies Centre	3.3	4	4	3.3	3.5	2	3	4.5
27	Marine Science Centre	2.8	2.8	3	3	4.5	1	3.3	3
28	Market Research Centre	4.2	3.6	3.3	3.3	4	3	3	3.5
29	Marshes Research Centre	3.7	3.2	3	3	4	2	4	4
30	Medical Appliances & Re-placements Research Unit	2.5	2.2	2.7	2.7	3	3	3	3
31	Medical Research Unit	4	4.2	4.7	4	5	4	3.7	4.5
32	Middle Euphrates Unit for Cancer Research	3.7	2.4	2.7	1.7	5	3.5	3	4.5
33	Mosul Studies Centre	1.8	4.4	3	3	1	2.5	2.7	3
34	Nanotechnology and Advanced Materials Res. Centre	3.2	3.2	3.7	3.7	5	3.5	3.3	4.5
35	National Diabetes Centre	2	1	3	3	3	1	3	3
36	Polymer Research Centre	4.3	4	2.7	4	4	4	5	4.5
37	Polymer Research Unit	1	2.6	2.7	2.7	3	4	3.7	4
38	Quality Research Unit	4.5	4.8	4	4	5	3	2	5
39	Regional Studies Centre	1.5	3	1	1	2.5	3	3.3	3.5
40	Remote Sensing Centre, Mosul University	1.8	1.2	3.3	3.3	3	5	3.7	4
41	Remote Sensing Unit	2.7	3.6	5	5	5	5	5	4.5
42	Renewable Energies Research Unit	1.8	1	2.3	2.3	5	2	4	4
43	Research Unit for Die Design & Man.	2.7	2.6	2.3	2.3	2.5	1.5	2	1
44	Salahuddin Alayubi Centre	2.8	2.6	4.7	4.7	5	5	4.7	5
45	Spatial Research Unit	4.2	3.8	4.7	5	5	2	1.3	4.5
46	Zoonotic Diseases Res. Unit	2	3	2.7	2.7	2.5	2.5	2.3	1

Table (Annex II-F2); Averages of scores allocated to obstacle categories by 46 research centres	
Research Institution	Rank
Alternate and Renewable Energy Research Unit	4.9
Cancer and Medical Genetics Research	4.5
Environmental Research Unit (Kirkuk Univ.)	4.5
Remote Sensing Unit	4.5
Educational Unit for Peace Studies	4.4
General Directorate of Research Centre. (SUH)	4.3
Salahuddin Alayubi Centre	4.3
Medical Research Unit	4.3
Cell and biotechnology research unit	4.2
Applied Sciences Research Unit	4.1
Date Palm Research Unit	4.1
Environment and Pollution Control Researches Centre	4.1
Hemoglobinopathy Unit	4.1
Polymer Research Centre	4.1
Economic Research Unit	4.1
Quality Research Unit	4.0
Clinical Zoonotic Diseases Res. Unit	4.0
GIS and Remote Sensing Unit	3.8
Spatial Research Unit	3.8
Nanotechnology and Advanced Materials Research Centre	3.8
Dams and Water Resources Research Centre	3.6
Market Research Centre	3.5
Kufa Studies Centre	3.5
Centre for Arab & International Studies	3.4
Marshes Research Centre	3.4
Dohuk Research Centre	3.3
Middle Euphrates Unit for Cancer Research	3.3
Centre of Revival of Arabian Science Heritage	3.3
Environmental Research Centre	3.3
Remote Sensing Centre, Mosul University	3.2
Energy and Fuel Research Centre	3.1
Polymer Research Unit	3.0
Marine Science Centre	2.9
Renewable Energies Research Unit	2.8
Medical Appliances & Replacements Research	2.8
Mosul Studies Centre	2.7
National Diabetes Centre	2.4
Regional Studies Centre	2.4
Biomathematics Unit	2.3
Zoonotic Diseases Res. Unit	2.3
Centre For International Studies	2.3
Breast and Cervical Cancer Research Unit	2.2
Biological unit for Tropical Diseases	2.1
Research Unit for Die Design & Man.	2.1
Environmental Pollution Research Unit	1.7
Corn Research Unit	1.7
Average of averages	3.4

Table (Annex II-F3); Averages of scores allocated to obstacle groups by applied science research institutions	
Research institution	Rank
Alternate and Renewable Energy Research Unit	4.9
Remote Sensing Unit	4.5
Environmental Research Unit (Kirkuk Univ.)	4.5
General Directorate of Research Centre (SUH)	4.3
Cell and biotechnology research unit	4.2
Date Palm Research Unit	4.1
Applied Sciences Research Unit	4.1
Environment and Pollution Control Research Centre	4.1
Polymer Research Centre	4.1
Quality Research Unit	4.0
GIS and Remote Sensing Unit	3.8
Nanotechnology and Advanced Materials Research Centre	3.8
Dams and Water Resources Research Centre	3.6
Marshes Research Centre	3.4
Dohuk Research Centre	3.3
Environmental Research Centre	3.3
Remote Sensing Centre, Mosul University	3.2
Energy and Fuel Research Centre	3.1
Polymer Research Unit	3.0
Marine Science Centre	2.9
Renewable Energies Research Unit	2.8
Biomathematics Unit	2.3
Research Unit for Die Design and Manufacturing	2.1
Environmental Pollution Research Unit	1.7
Corn Research Unit	1.7
Average of averages	3.5

Table (Annex II-F4); Averages of scores allocated to obstacle groups by selected applied science research institutions	
Research institution	Rank
General Directorate of Research Centre (SUH)	4.3
Cell and biotechnology research unit	4.2
Applied Sciences Research Unit	4.1
Polymer Research Centre	4.1
Quality Research Unit	4.0
Nanotechnology and Advanced Materials Research Centre	3.8
Dohuk Research Centre	3.3
Polymer Research Unit	3.0
Biomathematics Unit	2.3
Research Unit for Die Design & Man.	2.1
Average of averages	3.5

Table (Annex II-F5); Averages of scores allocated to obstacle groups by energy and environment research institutions	
Research institution	Rank
Marine Science Centre	2.9
Environmental Research Unit (Kirkuk Univ.)	4.5
Alternate and Renewable Energy Research Unit	4.9
Environmental Research Centre	3.3
Environment and Pollution Control Researches Centre	4.1
Environmental Pollution Research Unit	1.7
Renewable Energies Research Unit	2.8
Energy and Fuel Research Centre	3.1
Average of averages	3.4

Table (Annex II-F6); Averages of scores allocated to obstacle groups by agricultural research institutions	
Research institutions	Rank
Date Palm Research Unit	4.1
Dams and Water Resources Research Centre	3.6
Marshes Research Centre	3.4
Corn Research Unit	1.7
Average of averages	3.2

Table (Annex II-F7); Averages of scores allocated to obstacle groups by GIS and remote sensing research institutions	
Research institutions	Rank
Remote Sensing Centre, Mosul University	3.2
Remote Sensing Unit	4.5
Geographic Information Systems and Remote Sensing Unit	3.8
Average of averages	3.8

Table (Annex II-F8); Averages of scores allocated to obstacle groups by medical research institutions	
Research institutions	Rank
Cancer and Medical Genetics Research	4.5
Medical Research Unit	4.3
Hemoglobinopathy Unit	4.1
Clinical Zoonotic Diseases Res. Unit	4.0
Middle Euphrates Unit for Cancer Research	3.3
Medical Appliances Re-placements Res. Uni	2.8
National Diabetes Centre	2.4
Zoonotic Diseases Res. Unit	2.3
Breast and Cervical Cancer Research Unit	2.2
Biological unit for Tropical Diseases	2.1
Average of averages	3.2

Table (Annex II-F9; Averages of scores allocated to obstacle groups by selected social science and humanities research institutions	
Research institutions	Rank
Market Research Centre	3.5
Mosul Studies Centre	2.7
Centre for Arab & International Studies	3.4
Educational Unit for Peace Studies	4.4
Salahuddin Alayubi Centre	4.3
Economic Research Unit	4.1
Regional Studies Centre	2.4
Spatial Research Unit	3.8
Centre of Revival of Arabian Science Heritage	3.3
Centre For International Studies	2.3
Kufa Studies Centre	3.5
Average of averages	3.4

Annex (II)

G. Information and Communications Technology Equipment and Infrastructures

Table (Annex II-G1); Information and communications technology facilities and related resources possessed by responding research institutions.					
	Total PCs & laptops	Ratio of PCs & laptops to researchers	Bandwidth for linking to internet	Availability of intranet	Av. annual expenditure on ICT (US \$)‡
Al Mostansiriyah Centre for Arab and Intl. Studies	7	- ²⁵	-	Yes	-
Alternate and Renewable Energy Research Unit	1	-	-	-	-
Applied Science Research Unit	-	-	-	-	-
Biological Unit for Tropical Diseases	1	- ²⁶	-	-	-
Biomathematics Unit	5	5	6*	-	-
Biotechnology Research Centre	21	-	weak	-	-
Breast & Cervical Cancer Research Unit	16	1	-	-	-
Cell and biotechnology research unit	1	- ²⁷	-	-	-
Centre of revival of Arabian science heritage	-	-	-	-	-
Childhood and Motherhood Research Centre	7	1	-	-	-
Clinical zoonotic diseases research unit	1	0.5	-	-	-
Corn Research Unit	-	-	-	-	-
Dams and water resources research centre	30	1	- ²⁸	Yes	-
Date Palm Research Unit	1	0.25	256/212	yes	-
Economic Research Unit (Baghdad University)	2	1	-	-	-
Educational Unit for Peace Studies	-	-	-	-	-
Energy and Fuel Research Centre	22	22/19	100 mbps	Yes	-
Environment and Pollution Control Researches Centre	17	1	-	Yes	500
Environmental Pollution Research Unit	-	-	-	-	-
Environmental Research Centre	36	1	-	Yes	-
Environmental Research Unit (Kirkuk University)	1	0.5 ²⁹	- ³⁰	-	-
Geographic Information Systems and Remote Sensing Unit	-	-	-	-	-
Hemoglobinopathy Unit	1	0.1	-	-	-
Iraqi Centre for Cancer and Medical Genetics Research	22	1	-	-	-
Kufa Studies Centre	-	-	-	-	-
Marine Science Centre	123	0.86	1 GB	Yes	208,333
Market Research and Consumer Protection Centre	40	0.7	- ³¹	-	-
Marshes Research Centre ³²	-	-	-	-	-
Medical Appliances and Replacements Research Unit	1	0.1	1*	-	-
Medical Research Unit (Al Nahrain College of Medicine)	10	1.2	2*	-	1,000
Middle Euphrates Unit for Cancer Researches	5	0.6	- ³³	-	-
Mosul Studies Centre	15	1	100 Mb	-	-
National Diabetes Centre	33	1	-	-	-
Polymer Research Centre	21	1.33	520 kbps	Yes	3,000
Quality Research Unit	1	1	13kbps	-	-
Regional Studies Centre	-	-	-	-	-
Remote Sensing Centre (Mosul University)	30	1	-	Yes	-
Remote Sensing Unit (Baghdad University)	15	1	100 kbps	-	-
Renewable Energies Research Unit	2	0.33	1*	Yes ³⁴	-
Research and rehabilitation information centre	-	-	-	-	-
Research Unit for Die Desgin and Manufacture	4	0.8	Available	-	-
Salahuddin Alayubi Centre for Hist. and Cultrl Studies	5	0.3	5 ³⁵	Yes	-
Spatial Research Unit	6	1	1024 m	Yes	-
Unit of Geographic Information Systems and Remote Sensing	7	0.1	1*	Yes ³⁶	-
Zoonotic Diseases Researches Unit ³⁷	-	-	-	-	-
Totals	510	-	-	-	-

‡ Average allocations in USD (thousands) over the period 2005-2010. * No units mentioned next to figure provided

²⁵ Questionnaire form gives a ratio of 7. There is need to check this ratio.

²⁶ This unit has an estimated 11 researchers.

²⁷ This unit has an estimated 8 researchers.

²⁸ The questionnaire indicates "26" against this entry.

²⁹ This Unit is reported as having two staff members of which one is a researcher.

³⁰ Questionnaire indicates "internet line from may 2011," against this entry.

³¹ The Questionnaire states "1 divided to 15 internet line" against this entry.

³² Questionnaire form used does not include table on ICT facilities.

³³ The questionnaire states "non" against this entry.

³⁴ Still described as bad service.

³⁵ The questionnaire states "5 bandwidth" against this entry.

³⁶ Entry by this institution declares that three networks are available.

³⁷ Questionnaire form used does not include table on ICT facilities.

Table (Annex II-G2); information and communications technology facilities and related resources in Iraqi social science and humanities research institutions responding to the questionnaire survey.					
	Total number of PCs and laptops	Ratio of PCs / laptops to research staff	Bandwidth available for linking to the internet	Availability of intranet networking	Average annual expenditure allocated to ICT facilities (US \$)‡
Social sciences and humanities					
Kufa Studies Centre	-	-	-	-	-
Market Research and Consumer Protection Centre	40	0.7	- ³⁸	-	-
Al Mostansiriyah Centre for Arab and Intl. Studies	7	7	-	1	-
Economic Research Unit (Baghdad University)	2	1	-	-	-
Mosul Studies Centre	15	1	100 Mb	-	-
Regional Studies Centre	-	-	-	-	-
Salahuddin Alayubi Centre for Hist. and Cultrl Studies	5	0.3	5 ³⁹	1	-
Spatial Research Unit	6	1	1024 m	yes	-
	75				

Table (Annex II-G3); Information and communications technology facilities and related resources in GIS and remote sensing institutions responding to the questionnaire survey.					
Unit of Geographic Information Systems and Remote Sensing	7	0.1	1 ⁴⁰	3	-
Remote Sensing Centre (Mosul University)	30	1	-	Yes	-
Remote Sensing Unit (Baghdad University)	15	1	100 kbps	-	-
Totals	52	-	-	-	-

Table (Annex II-G4); Information and communications technology facilities and related resources in selected applied sciences research institutions responding to the questionnaire survey.					
Polymer Research Centre	21	1.33	520 kbps	Yes	3,000
Quality Research Unit	1	1	13kbps	-	-
Research Unit for Die Desgin and Manufacture	4	0.8	Available	-	-
Totals	26	-	-	-	-

Table (Annex II-G5); Information and communications technology facilities and related resources in energy and environment research institutions responding to the questionnaire survey.					
Energy and fuel research centre	22	22/19	100 mbps	Yes	-
Environment and Pollution Control Researches Centre (Mosul University)	17	1	-	yes	500
Environmental pollution Research Unit	-	-	-	-	-
Environmental Research Centre	36	1	-	yes	-
Environmental Research Unit (Kirkuk University)	1	0.5 ⁴¹	- ⁴²		
Alternate and Renewable Energy Research Unit	1	-	-	-	-
Renewable Energies Research Unit	2	0.33	1 ⁴³	yes ⁴⁴	
Marine Science Centre	123	0.86	1 GB	yes	208,333
Totals	180	-	-	-	-

Table (Annex II-G6); Information and communications technology facilities and related resources in agricultural research institutions responding to the questionnaire survey.					
Corn Research Unit	-	-	-	-	-
Dams and water resources research centre	30	1	- ⁴⁵	Yes	
Date Palm Research Unit	1	0.25	256/212	Yes	-
Totals	31	-	-	-	-

³⁸ The Questionnaire states “1 divided to 15 internet line” against this entry.

³⁹ The questionnaire states “5 bandwidth” against this entry.

⁴⁰ No units are provided.

⁴¹ This Unit is reported as having two staff members of which one is a researcher.

⁴² Questionnaire indicates “internet line from may 2011,” against this entry.

⁴³ No units are provided.

⁴⁴ But described as bad service.

⁴⁵ The questionnaire indicates “26” against this entry.

Biological Unit for Tropical Diseases	1	⁴⁶	-	-	-
Biomathematics Unit	5	5	6 ⁴⁷	-	-
Biotechnology Research Centre	21	-	Weak	-	-
Breast & Cervical Cancer Research Unit	16	1	-	-	-
Cell and biotechnology research unit	1	⁴⁸	-	-	-
Centre of revival of Arabian science heritage	-	-	-	-	-
Childhood and Motherhood Research Centre	7	1	-	-	-
Clinical zoonotic diseases research unit	1	0.5	-	-	-
Medical Appliances and Replacements Research Unit	1	0.1	1 ⁴⁹	-	-
Medical Research Unit (Al Nahrain College of Medicine)	10	1.2	2 ⁵⁰	-	1,000
Middle Euphrates Unit for Cancer Researches	5	0.6	⁵¹	-	-
Hemoglobinopathy Unit	1	0.1	-	-	-
Iraqi Centre for Cancer and Medical Genetics Research	22	1	-	-	-
National Diabetes Centre	33	1	-	-	-
Research and rehabilitation information centre	-	-	-	-	-
Totals	124				

⁴⁶ This unit has an estimated 11 researchers.

⁴⁷ No units mentioned against this figure.

⁴⁸ This unit has an estimated 8 researchers.

⁴⁹ No units are provided.

⁵⁰ The Questionnaire mentions no units next to this figure.

⁵¹ The questionnaire states "non" against this entry.