



## Activities with Member Countries

# Egypt

Egypt became a member of IIASA in 2003 through the Academy of Scientific Research and Technology. Since 2010, research collaborations between IIASA and Egypt have involved 13 Egyptian organizations and led to 30 scientific publications in areas ranging from demography to renewable energy. Joint studies focus on the complex global systems that affect Egypt, its economy, environment, and people. Research topics include analyzing the challenges and opportunities of developing large-scale renewable energy infrastructure in Egypt and the surrounding region, modeling agriculture and water sustainability, and projecting Egypt’s future population. Underpinning the joint work is systems analysis—one of the few research tools with the breadth and depth to explore these complex problems across multiple sectors, countries, and timeframes. Moreover, the next generation of systems analysts are profiting from Egyptian involvement in IIASA capacity building activities. This mutually beneficial relationship involves scientific exchange, with 45 Egyptians participating in IIASA events and almost 20 visits from Egyptian researchers, advisors, and diplomats to IIASA, and by IIASA researchers to events and institutions in Egypt. This IIASA Info Sheet provides a summary of interactions between IIASA and Egypt since 2010.

Highlights of Interactions Between IIASA and Egypt (Since 2010)	
<b>National Member Organization</b>	Academy of Scientific Research and Technology (ASRT)
<b>Membership start date</b>	2003
<b>Key Research Partners</b>	13 research partners including: <ul style="list-style-type: none"> <li>■ Ain Shams University</li> <li>■ Alexandria University</li> <li>■ Assiut University</li> <li>■ Cairo Demographic Center</li> <li>■ Cairo University</li> <li>■ Damanhour University</li> <li>■ Egyptian Center for Economic Studies (ECES)</li> <li>■ Egyptian Council for Foreign Affairs</li> <li>■ Egyptian Environmental Affairs Agency (EEAA)</li> <li>■ Egyptian Information and Decision Support Center</li> <li>■ Ministry of International Cooperation</li> </ul>
<b>Areas of Research Collaboration</b>	<ul style="list-style-type: none"> <li>■ Projecting demographic change in Egypt</li> <li>■ Challenges and opportunities of renewable energy in Egypt</li> <li>■ Agriculture and water sustainability</li> <li>■ Sustainable energy and socio-economic development</li> <li>■ Improving our understanding of the spread of disease</li> </ul>
<b>Capacity Building</b>	Since 2010, 3 Egyptians have gained international and interdisciplinary research experience from participating in IIASA’s Young Scientists Summer Program.
<b>Publication Output</b>	30 publications have resulted from collaborations between IIASA and Egyptians since 2010.
<b>Other Interactions</b>	<ul style="list-style-type: none"> <li>■ Egyptians have participated in IIASA events 45 times since 2010.</li> <li>■ IIASA scientists have visited Egypt 12 times since 2010 and 5 Egyptian researchers have made official visits to IIASA.</li> </ul>

## Activities with Member Countries: Egypt

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IIASA Info Sheets provide succinct summaries of IIASA activities.  
They do not necessarily reflect the views of IIASA staff, visitors,  
or National Member Organizations.

This Info Sheet summarizes IIASA interactions with Egypt during 2010–2017; the  
research collaboration section covers 2010–2017. It includes highlights, with  
links to further information, but is not intended to be a comprehensive report on  
all interactions.

Feedback and updates are encouraged and should be sent to Kim Montgomery.

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## IIASA National Member Organization in Egypt

The Academy of Scientific Research and Technology (ASRT) is the National Member Organization (NMO) representing Egypt's membership of IIASA. ASRT, established by Presidential Decree in 1971, takes responsibility for science and technology activities in Egypt. It is a public authority with independent status affiliated to the State Ministry for Scientific Research and Technology (MOSR). ASRT pays IIASA membership fees with funding provided by the Ministry of Finance.

Professor Mahmoud Mohamed Sakr, President of ASRT is the IIASA Council Member for Egypt. The IIASA Council consists of one representative from each IIASA National Member Organization and is responsible for setting the overall strategic direction of the Institute as well as governing IIASA. Mrs. Abeer Mohamed Attia, Senior Translator and Scientific Relations Specialist at ASRT is the NMO Secretary for Egypt.

The NMO has established the National Committee of System Analysis and Future studies to strengthen collaboration and communication between IIASA and the broader science and technology community in Egypt. Professor Sakr chairs the committee and Mrs. Abeer serves as the technical secretariat. The other current members are:

**Prof Dr Abdel Maguid Kassem**, Professor, Faculty of Medicine, Cairo University

**Prof Dr Abdel-Hameed Al-Qassas**, President, National Institute of Planning

**Prof Dr Essam Hassan Mohamed Ahmed**, Lead Author, Working Group III, Intergovernmental Panel on Climate Change; GHG Inventory, National Expert, UNFCCC; Climate Change and Sustainable Development Consultant

**Dr Haiam Helmy**, Deputy Director, Egyptian Science, Technology and Innovation Observatory (ESTIO), Academy of Scientific Research and Technology

**Dr Hatem Elrefaei**, Professor, Faculty of Engineering, Ain Shams University

**Dr Huda Al Kit-Kat**, Biostatistics and Demography Expert Prof Dr Mohamed Sayed Othman, Professor, Mathematics, and former President, Tenth of Ramadan University

**Prof Dr Mohamed Sayed Othman**, Professor, Mathematics, and former President, Tenth of Ramadan University

**Prof Dr Mounir Wahba Labib Risk**, GHG Technical Advisor, Egypt-Third National Communication project-UNDP, Egyptian Environmental Affairs Agency, Ministry of State for Environmental Affairs

**Dr Nisreen Lahham**, President, Forum of Future Studies for Africa and the Middle East

**Prof Dr Samiha A Ouda**, Professor, Soils, Water and Environment Research Institute, Agricultural Research Center

**Dr Shaker Mohamed Abolmaaty**, Central Lab for Agricultural Climate, Agricultural Research Center

**Dr Tarek Mohamed El-Geziry**, Researcher, Lab of Physical Oceanography, National Institute of Oceanography and Fisheries

*The Academy of Scientific Research and Technology (ASRT) represents Egypt and its scholarly community on IIASA governing Council*

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**Academy of scientific Research  
And Technology**

أكاديمية البحث العلمي والتكنولوجيا



Some leading Egyptian personalities in academia and government who are associated with IIASA

**Professor Tyseer Aboulnsar**, former Professor of Electrical Engineering, Faculty of Applied Science, University of British Columbia, Canada Visiting Professor at Nile University in Cairo, was a panel member of the 2017 IIASA Institutional Review.

**Professor Maged Moustafa Al-Sherbiny**, Cairo University and former President of the Academy of Scientific Research and Technology, was IIASA Council Member for Egypt in 2012.

**Professor Yomn el Hamaki**, Ain Shams University, collaborates with IIASA researchers to study the social and environmental challenges of renewable energy in Egypt, North Africa, and the Middle East.

**Dr Omneia Helmy**, Director of Research at the Egyptian Center for Economic Studies, works with IIASA on renewable energy.

**Professor Adel Khalil**, Cairo University and former Chair of Executive Committee of the Regional Center of Excellence of Renewable Energy and Energy Efficiency has researched the potential of renewable energy in North Africa with IIASA.

**Professor Galal Osman**, former President of the World Wind Energy Association, President of the African Renewable Energy Association, and Director of the Renewable Energy Research Center at Mansoura University has collaborated with IIASA to explore the risks and opportunities of renewable energy storage systems in the deserts of the Middle East and North Africa.

**Dr Mounir Wahba Labib Risk**, GHG Technical Advisor at the Egyptian Environmental Affairs Agency was a reviewer for the evaluation of IIASA's Programs in 2014.

**Professor Mohsen M Shoukry**, former Vice President of the Academy of Scientific Research and Technology, was IIASA Council Member for Egypt from 2003 to 2010.

## Research Partners in Egypt

*IIASA is continually developing collaborations with Egypt and has recently been working with 13 organizations in Egypt via formal and informal connections*

IIASA works with research funders, academic institutions, policymakers and individual researchers in Egypt. The following list includes the names of the organizations or the individual's affiliated institutions that have all recently collaborated with IIASA.

Ain Shams University

Alexandria University

Assiut University

Cabinet of the Minister of International Cooperation of Egypt

Cairo Demographic Center

Cairo University

Centre for Environment & Development for the Arab Region & Europe (CEDARE), Cairo

Damanhour University

Egyptian Center for Economic Studies (ECES)

Egyptian Council for Foreign Affairs

Egyptian Environmental Affairs Agency (EEAA)

Egyptian Information and Decision Support Center

Regional Center for Renewable Energy and Energy Efficiency (RCREEE), Cairo

IIASA research is underpinned by high-quality science, which is regularly published in high impact publications. A selection of current publications is presented here and full list can be found in appendix 4:

Al Zalak Z & Goujon A (2017). Exploring the fertility trend in Egypt. *Demographic Research* 37: 995-1030. DOI:10.4054/DemRes.2017.37.32.

Rosa IMD, Pereira HM, Ferrier S, et al. (2017) Multiscale scenarios for nature futures. *Nature Ecology and Evolution* 1(10):1416-1419 DOI:10.1038/s41559-017-0273-9

Fritz S, See L, McCallum I, et al. (2015) Mapping global cropland and field size. Mapping global cropland and field size. *Global Change Biology*, 21(5):1980-1992.

Farag N & Komendantova N (2014). Multiplier effects on socioeconomic development from investment in renewable energy projects in Egypt: Desertec versus energy for local consumption scenarios. *International Journal of Renewable Energy Research*, 4(4):1108-1118 (2014).

Goujon A (2014). The Arab Spring: The Role of Quality Education and the Consequences of its Lack. ÖGFE Policy Brief 2'2014, *Austrian Society for European Politics* (Oesterreichische Gesellschaft fuer Europapolitik).

Kassem HA, Siri JG, Kamal HA & Wilson ML (2012). Environmental factors underlying spatial patterns of sand flies (Diptera: Psychodidae) associated with leishmaniasis in southern Sinai, Egypt. *Acta Tropica* 123(1):8-15.

Goujon A & Alkitkat H (2010). Population and human capital in Egypt to 2050 [Population et capital humain en Egypte a l'horizon 2050]. *Egypte: l'Eclipse, Confluences Méditerranée* 4(75):34-48.

Selected publications  
resulting from IIASA-  
Egyptian collaborations

## Recent Research Collaborations

### *Projecting demographic change in Egypt*

IIASA demographers are providing independent analysis and projections of Egypt's future population. IIASA demographers study and project the changing composition of population for all countries of the world. They produce one of the few independent alternatives to the demographic projections of the UN Population Division. As a testament to the quality of IIASA demography, the Intergovernmental Panel on Climate Change in 2011 adopted IIASA population projections as its source data in all modeling for the Fifth Assessment Report; and UNESCO has adopted IIASA demographic methods as part of its literacy forecasting.

The Institute's interdisciplinary approach has encouraged its demographers to reach beyond the traditional boundaries of demography and to explore how changes in society, economy, and the natural environment influence the health and mortality, migratory patterns, and reproductive behavior of human society. A recent innovative example of this broader approach has been the development of research methods to project population by level of education. This equips researchers with the tools to explore the implications of different education policies on a country's future fertility, life expectancy, migration, and population level as well as economic growth and ability to adapt to climate change.

In 2014, IIASA published the first projections of educational attainment by age and sex for 195 countries with *Oxford University Press* volume *World Population and Human Capital in the Twenty-First Century*. Findings for Egypt show how different policies over the next few decades could lead to the country's 2010 population of 81 million increasing to 200 million by 2100 or stabilizing at around 100 million. Additionally, in 2016, *Who Survives? Education decides the future of humanity*, a book summarizing scientific research conducted at IIASA was published detailing the importance of education for societal and economic development. The researchers found that education is often more important than income, when looking at health, resilience and wellbeing.

*IIASA demographers are providing independent analysis and projections of Egypt's future population*

Current Egypt-IIASA population studies include:

- Researchers from the Wittgenstein Centre for Demography and Global Human Capital and IIASA explored the underlying causes for the recent fertility increases in several Arab countries. In Egypt, the researchers found that the fertility increase was associated in part with declining labor market opportunities for well-educated young women. The research was published in *Demographic Research* in 2017.
- A collaboration between researchers at IIASA and the Egyptian Information and Decision Support Center has also explored human capital and population in Egypt in more depth.
- A joint study with the Cairo Demographic Center into population growth and sustainable development policies in Egypt and its Governorates to 2051.

### **Challenges and opportunities of renewable energy in Egypt**

*Ongoing collaborations with Egyptian researchers are exploring the risks and opportunities for socio-economic development in Egypt from investment in renewable energy*

Egypt's demand for energy has been increasing alongside its increase in population. Demand for electricity increased by more than 200% from 1990 to 2009 and is expected to be twice the current level by 2025. In the past few years, Egypt has emerged as a regional leader in the field of exploiting renewable energy in electricity generation and has set a national target to generate 20% of total electricity from renewable sources by 2022. Maximizing renewable energy production in an equitable and environmentally-friendly manner requires adopting and implementing the most effective and efficient strategies. The holistic approach of systems analysis can help identify strategies that reap multiple benefits across sectors and regions, as well as avoid policies that lead to negative side effects in remotely connected activities.

A range of joint studies between IIASA and Egyptian researchers have analyzed the risks and opportunities of expanding renewable energy in Egypt and the wider region. Research includes:

- Analyses of barriers to renewable energy investment;
- Studies of the perceived risks of expanding renewable energy;
- Investigations into the potential for green job creation; and
- Research into the trade-offs between exporting to Europe the renewable energy created or using for local consumption conducted with a senior economist from Egypt's Ministry of International Cooperation.

#### **IIASA global contribution**

Many of today's most pressing challenges do not stop at international borders. IIASA research areas such as climate change, water scarcity, and poverty are affected by multiple factors across the globe. In turn these global problems have impacts on nations, regions, and continents. Finding long-lasting solutions to these challenges requires scientific expertise that is free from the interests of a single nation. IIASA National Member Organizations recognize this need and that their investment in IIASA is a contribution to a global public good. And the benefit of this contribution is paid back to global researchers, policymakers, and citizens in multiple ways as the following examples show:

1. IIASA supports the climate change research community by hosting the Representative Concentration Pathways (RCP) database. The database provides data on greenhouse gas emissions for four different future scenarios that underpin the analysis of thousands of climate change researchers. IIASA also calculated the data for one of the scenarios, all of which have been developed for the world's most comprehensive analysis of climate change—the IPCC's (Intergovernmental Panel on Climate Change) Fifth Assessment Report.
2. IIASA research provides scientific guidance to the Convention on Long-range Transboundary Air Pollution of the United Nations Economic Commission for Europe. This international environmental treaty between 33 countries has slashed air pollution in Europe, improving people's health and countries' crop production. IIASA GAINS model guided negotiators and policymakers as they worked on the treaty to identify the most cost-effective approach to cleaning Europe's air. The negotiators chose the GAINS model not only because of its accuracy and usability but also because it had been developed by an international team with funding from multiple countries, which assured them that the model was nationally unbiased.

## Agriculture and Water Sustainability

Egyptian national interests are integrally connected to complex global systems that impinge on the country's food, water, and climate among others. Recent work from IIASA is improving the modeling of food production and water, and so increasing our understanding of how global and national food and water policies may impact Egypt.

*IIASA researchers are advancing the modeling of agriculture and water use and their interactions*

Studies include:

- An international research collaboration including researchers from IIASA and the Egyptian Environmental Affairs Agency (EEAA), developed a strategy for new scenario approaches that would consider both targets for human development and nature to better inform policymakers about changes in nature, such as biodiversity loss. The research was published in *Nature Ecology and Evolution* in 2017.
- An international research study with researchers from IIASA and Ain Shams University developed two new global cropland maps that combine multiple satellite data sources with crowdsourcing validation data, to provide an improved record of total cropland extent as well as field size around the world. The first map shows global cropland percentages at 1 kilometer resolution for the year 2005. The second map was a global field size map – an important proxy for mechanization and human development. This map was based entirely on crowdsourced data. The research was published in *Global Change Biology* in 2015.
- The quantification of how much water is needed in rivers to sustain freshwater ecosystems in addition to the water extracted for food production and other human needs. The research showed the Nile requires between 12% and 48% of the mean annual flow to sustain freshwater ecosystems.
- A project using a hydro-economic model to analyze different options to ensure future food security in the Nile Basin.
- The IIASA project, Water Futures and Solutions (WFaS), is conducting an integrated analysis of global water challenges and solutions.

Through intense data gathering, computer modeling, and other advanced research methods, IIASA provides a country's researchers and their policymakers with the essential numbers and tools to select the most effective policies. For example:

- IIASA has recently updated its Energy and Carbon Emissions Inventory Database (ECDB), a comprehensive database on energy use, carbon emissions, and energy and carbon intensities both globally and by country for the largest carbon-emitting nations. The new update adds Egypt to the database, bringing the total number of countries to 27, which together account for roughly 80% of global carbon emissions. The update also added country-by-country data on emissions coming from land use change, an important contributor to climate change. The updated database also provides more options for users for defining GDP, as well as detailed information about uncertainties in the inventory data.

Many of the research projects summarized in this Info Sheet draw on analyses from other IIASA models, tools, and data including:

- Reducing air pollutants and greenhouse gas emissions simultaneously (GAINS model).
- Planning a sustainable energy system (MESSAGE model, Global Energy Assessment Scenario Database).
- Reducing energy poverty (Energy Access Interactive Tool [ENACT]).
- Improving food security through identifying yield gaps (GAEZ model) and assessing competition for land use between agriculture, bioenergy, and forestry (GLOBIOM model), and looking at social, economic, and environmental earth systems (Felix).
- Financial disaster risk management (CATSIM model).
- Projecting future population (Demographic multistate modeling).

IIASA models, tools, and data

To further develop research collaborations in the area of water sustainability, IIASA is hosting a training workshop entitled “Introduction and Exploration of Projects and Modelling Approaches in the IIASA Water Program” with the Academy of Scientific Research and Technology (ASRT) in Cairo from January 28 - February 1, 2018. The aim of the workshop is to strengthen participants’ knowledge on the development and use of models and systems analysis approaches, towards a better understanding of current and future issues surrounding water resource management.

### **Sustainable energy and socio-economic development**

*Several recent collaborations are bringing together IIASA and Egyptian researchers to study sustainable energy and the impacts of different energy pathways on socio-economic development in Egypt*

To date, discussions in Egypt regarding the country’s future energy system have focused mainly on technological features, macro-economic costs, regulatory issues, and the political environment. Social and local factors have rarely, if ever, been included in the scientific and political discussion. A new collaboration between IIASA, the University of Ain Shams, the Regional Center for Renewable Energy and Energy Efficiency in Cairo, and 350.org in Egypt aims to fill this gap by exploring public perception toward different energy pathways in Egypt. The project running from 2015 to 2018 is funded by the German Ministry for Economic Cooperation and Development and the German Society for International Cooperation. Among other issues, it aims to identify which future energy system and the pathways to it will be most accepted or which will receive the most opposition; and which energy policies and practices from around the world could be most effectively applied to Egypt.

Other collaborations include:

- In December 2014, researchers from IIASA and other organizations involved in the UN Secretary General’s Sustainable Energy For All (SE4ALL) Initiative visited Cairo to start a dialog with Egypt about developing activities to support the goals of SE4ALL.
- IIASA researchers recently collaborated with the Egyptian Environmental Affairs Agency and other partners on the introductory chapter to the Fifth Assessment Report (Working Group III) of the Intergovernmental Panel on Climate Change

#### **IIASA working with business**

Business can benefit from science through the analysis and knowledge it provides. In turn, science can benefit from business through its experience on the ground and in implementation. IIASA also recognizes that closer collaboration between business and its researchers can increase the impact of the Institute’s work. Not surprisingly, IIASA is seeing a growing number of contracts with commercial partners, including:

- The global insurer, **Zurich Insurance Group**, began working with IIASA in 2013 to identify and address research gaps on flood resilience and community based disaster risk reduction, demonstrate the benefits of pre-event risk reduction over post-event disaster relief and to improve public dialogue around disaster resilience.
- The German carmaker, **Daimler AG**, has collaborated with IIASA researchers to assess biofuel potential from marginal and degraded lands in India and Brazil.
- The Brazilian energy company, **Petrobrás**, was one of nineteen sponsors of IIASA Global Energy Assessment.
- The research institute of the Japanese carmaker, **Toyota**, has an ongoing collaboration with IIASA to research measures to reduce ozone emissions in Asia.
- The multinational consumer goods company, **Unilever**, funded IIASA’s agricultural experts from 2008-10 to analyze yields and land suitability of key agricultural crops under a changing climate.

In addition, IIASA is exploring ways that it can work more closely with multinational corporations, including through input to the development of their global sustainable business plans.

## Improving our understanding of the spread of disease

Scientists at IIASA and Ain Shams University have published a recent study exploring the environmental factors underlying the spatial patterns of sand flies in southern Sinai in order to produce more accurate transmission risk maps of Leishmania—a chronic and potentially fatal parasitic disease.

*IIASA and Egyptian researchers have combined their modeling expertise with information from Geographic Information Systems to improve maps of the transmission risk of a parasite*

## Capacity Building

### Young Scientists Summer Program

The Young Scientists Summer Program (YSSP) develops the research skills and networks of talented PhD students. Program participants conduct independent research within the Institute's research programs under the guidance of IIASA scientific staff. Funding is provided through IIASA's National Member Organizations. Since 2010, the following 3 students from Egypt have participated:

*Since 2010, 3 Egyptian students have developed research skills and networks by taking part in IIASA Young Scientists Summer Program*

#### YSSP'16

**Osama Ibrahim** (Military Technical College Egypt) developed a systems tool for prescriptive policy analysis. Labelled causal mapping, the tool helped with problem structuring method for policy modelling, simulation and decision analysis.

#### YSSP'13

**Noran Bakr** (Cairo University) explored the risks for socio-economic development in Egypt with a focus on investment into renewable energy.

#### YSSP '11

**Ahmed Mohamed Harb Rabia Hammad** (University of Alexandria) conducted case studies of two different climatic zones (Valle Telesina, Italy and Nile Delta, Egypt) in order to model climate change impacts on soil properties and land use change.

IIASA was established in 1972 to use scientific cooperation to build bridges across the Cold War divide and research growing global problems on a truly international scale. Today the soft power of science diplomacy continues to help IIASA member countries through using scientific cooperation to improve international relations, and through international teams jointly researching controversial issues to find consensus such as through integrative assessments of the future for the Arctic or of the economic integration of Eurasia.

In addition, IIASA also maintains its original bridge-building objective through attracting member countries that represent a range of geo-political interests (see full list of members: [Back page](#)). For instance, both Russia and the US are members; as are Brazil, China, India, and South Africa. Several key factors also unite all IIASA member countries: their interest in systems analysis, scientific and academic infrastructure, economic stability and the geopolitical role in future global transitions. With this in mind, IIASA recently negotiated membership with Iran and Israel.

Research to support science diplomacy

## IIASA-Egyptian scientific exchange through people

A selection of presentations by IIASA researchers in Egypt and by Egyptian researchers at IIASA follows:

**Markus Amann**, member of the Steering Committee, attended the Interim Steering Group Meeting on Pollution Management and Environmental Health Program in Cairo in 2015.

**Anne Goujon and Huda Alkitkat** on "Using Systems Analysis to Forecast Labor Force Participation by Age, Sex, and Educational Attainment in Egypt to 2051" at the Systems Analysis 2015 - A Conference in Celebration of Howard Raiffa in 2015 at IIASA.

**Nadejda Komendantova-Amann** on "Governance in transition: addressing renewable energy challenges and opportunities in the Arab and MENA region" at the 4th Arab Conference on Astronomy and Geophysics in 2014 in Cairo.

**Professor Osman Galal**, President of the World Wind Energy Association, based in Cairo, Egypt on "Off-Grid Wind/Solar Energy/Renewable Energy Storage Systems and Sustainable Development of MENA" at the IIASA seminar on "Risk and Opportunity of Energy Transformation in Middle East and North African Region" at IIASA in 2013.

**Professor Yousry Abushady**, member of the Egyptian Council for Foreign Affairs, on the "Present and Future Research in Nuclear Energy in Egypt" at the IIASA seminar on "Risk and Opportunity of Energy Transformation in Middle East and North African Region" at IIASA in 2013.

**Anne Goujon** on "Human Capital Projections Using the Multistate Methodology" at the 41st Cairo Demographic Centre Conference in 2012 in Cairo.

Other examples of scientific exchange include:

- Egyptians have participated in IIASA events 45 times since 2010.
- 30 publications have resulted from collaborations between IIASA and Egyptians since 2010.
- Since 2010, 3 Egyptians have gained international and interdisciplinary research experience from participating in IIASA Young Scientists Summer Program.
- IIASA scientists have visited Egypt 12 times since 2010 and 5 Egyptian researchers have made official visits to IIASA.

### Appendices

The details behind the above facts can be found in the following appendices to the country sheet. The appendices are either attached or available on request from Tom Danaher (danaher@iiasa.ac.at):

1. Egyptian visitors to IIASA (2010-2017)
2. Conference participants from Egypt to IIASA (2010-2017)
3. Travel by IIASA scientists to Egypt (2010-2017)
4. Publications relevant to IIASA-Egypt Collaborations (2010-2017)

## Prospects for Future IIASA-Egypt Activities

This Info Sheet summarizes recent research collaborations between IIASA and Egypt (see pages 5 to 9). Significant potential remains to further intensify the IIASA-Egyptian relationship through developing a range of new joint activities including:

- **Enhancing Egyptian expertise in applying system analysis to national problems:** Developing bespoke Egyptian versions of IIASA global models would allow researchers and policymakers to look at complex global problems and their impact on Egypt in a holistic and integrated way.
- **Conducting international assessments in areas of Egyptian strategic interest:** IIASA recently completed the Global Energy Assessment which brought together over 500 specialists to transform the way society thinks about, uses, and delivers energy. IIASA is embarking on two new assessments, at the request of its member countries that will focus on issues that may be of strategic interest to Egypt. These are holistic, integrative assessments of plausible futures for global water challenges and tropical forests.
- **New partnerships between IIASA and Egyptian institutions to win grants from international research funders:** IIASA high-quality research and international research network makes it highly competitive in its applications for international research funds. Between 2010 and 2015, this additional funding reached €51 million. This was part of a total funding portfolio of €250 million, the total awarded to external projects featuring collaborations between IIASA and its member countries.
- **Using international scientific cooperation to support diplomacy:** IIASA was established in 1972 to use scientific cooperation to build bridges across the Cold War divide and research growing global problems on a truly international scale. Today the soft power of science diplomacy continues to help IIASA member countries through using scientific cooperation to improve international relations, and through international teams jointly researching controversial issues to find consensus, free from the constraints of national self-interest (see box: Research to support science diplomacy: page 9). IIASA recently launched a new global project to evaluate issues arising at the nexus of food, water, energy, and climate change.
- **Academic training opportunities for young Egyptian scientists:** There is significant potential to enhance participation by young Egyptian PhD and postdoctoral students in IIASA programs to develop international and interdisciplinary research skills (see page 9: Capacity Building).

*Enhancing the IIASA-Egypt relationship offers benefits for Egyptian research, government policy, and international relations*



## About IIASA

Founded in 1972, the International Institute for Applied Systems Analysis (IIASA) conducts policy-oriented research into problems of a global nature that are too large or too complex to be solved by a single country or academic discipline. IIASA research is across and at the intersection of natural, human, social, knowledge and technology systems to support the development of integrated solutions to global sustainability challenges.

IIASA is at the center of a global research network of around 3,500 scholars and over 700 partner institutions in over 65 countries. It is funded and supported by its National Member Organizations which represent the scholarly community in the following countries:

Austria, Brazil, China, Egypt, Finland, Germany, India (Observer), Indonesia, Iran, Israel, Malaysia, Japan, Netherlands, Norway, Republic of Korea, Russia, South Africa, Sweden, Ukraine, United Kingdom, United States of America, Vietnam.

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