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IIASA and Jordan

Introduction

This is a background briefing on interactions between IIASA and Jordan since 2008. It summarizes recent research collaborations and other connections along with listing the publication output from these joint activities. Activities with existing IIASA member countries are substantially higher for all indicators ([see IIASA Info Sheets with Member Countries](#)) and demonstrate the value that Jordan could gain via IIASA membership.

Recent Research Collaborations with Jordan or about Jordan

Projecting demographic change in Jordan

[IIASA's 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's demography, the IPCC in 2011 adopted IIASA's population projections as its source data in all modeling for the Fifth Assessment Report; and [UNESCO has adopted IIASA's demographic methods](#) as part of its literacy forecasting.

In addition, the Institute's interdisciplinary setting has encouraged its demographers to research 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. Findings](#) for Jordan show how different policies over the next few decades could lead to the country's 2010 population of 6.2 million increasing to 12 million by 2100 or soaring to over 24 million.

Public acceptance of large-scale renewable energy installations in Jordan

IIASA researchers are working with researchers from the University of Jordan and from Switzerland to identify the drivers of local public acceptance and opposition toward renewable energy sources in Jordan. Through a standardized survey and in-depth interviews the researchers are exploring one of the socio-economic risks (i.e. community acceptance) of deploying large renewable energy infrastructure in Jordan. The research is funded by [one of the seven major grants that IIASA has won in recent years from the European Research Council](#).

Modeling air pollution

A collaboration between researchers from the University of Jordan, IIASA and Finland have developed a [model to calculate the regional deposited dose of submicron aerosol particles in the respiratory system](#). Modeling the deposited dose is superior to measurements because it saves time and efforts in assessing the health effects of aerosol particles.

IIASA has considerable expertise in identifying cost-effective measures to reduce air pollution. The Institute's [GAINS model](#) has been [applied successfully to many international environmental negotiations](#) to identify smart mixes of measures to simultaneously cut air pollution and greenhouse gas emissions in the most cost-effective way. This is because systems analysis is one of the few methods that has the breadth and depth to analyze environmental problems and 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.

IIASA Capacity Building Activities

IIASA offers a range of capacity building programs to develop the skills and experience of young scientists through researching in IIASA's international and interdisciplinary scientific environment. The programs help the young scientist to (1) develop expertise in systems analysis, (2) look at his/her work from fresh angles, (3) to publish widely in journal articles, and (4) to establish his/her own global network of collaborators.

Programs include:

1. For PhD students:
 - a. The [Young Scientists Summer Program](#) (3 months at IIASA from June through August)
 - b. The [Southern African Young Scientists Summer Program](#) (3 months in South Africa from November to February)
2. For Postdoctoral scholars:
 - a. [Various opportunities](#) to spend between 12 and 24 months researching at IIASA

As preference is given to applicants from member countries, unfortunately no Jordanian young scientists have taken part in these programs to date. [Feedback from participants](#) provides an indication of what young researchers can gain from taking part in the programs.

Scientific Exchange with Jordan

In addition to the research activities mentioned above, scientific exchange takes place through IIASA researchers visiting Jordan and Jordanian researchers visiting IIASA:

Research Partners

IIASA researchers have collaborated with a range of individual researchers in Jordan who all are affiliated with:

- [University of Jordan](#)

Jordanian visitors to IIASA and IIASA travel to Jordan

One Jordanian has visited IIASA and three IIASA researchers have visited Jordan since 2008.

Presentations by IIASA researchers in Jordan include:

Nadejda Komendantova on "Social and environmental challenges of EU-MENA renewable power cooperation" at the University of Amman in 2014.

Susanne Hanger briefed students and moderated the discussion on "The implementation of a survey to measure public acceptance of renewable energy in Jordan" at the University of Amman in 2014.

Nadejda Komendantova on "Opportunities and Risks of Large-Scale EU-MENA Energy Cooperation" at the Fourth Global Conference on Renewable Energy Approaches for Desert Regions in Amman in 2013.

Publications relevant to IIASA-Jordanian Collaborations since 2008

The publication list contains only publications authored by IIASA-affiliated researchers and a researcher based at an institute in Jordan:

Hussein, T., Löndahl, J., Paasonen, P., Koivisto, A.J., Petäjä, T., Hämeri, K., Kulmala, M. Modeling regional deposited dose of submicron aerosol particles. (2013) *Science of the Total Environment*, 458-460, pp. 140-149.