Participatory governance of energy transition in Jordan: a way to address existing uncertainties in decision-making processes Nadejda Komendantova, Love Ekenberg and Joanne Linnerooth-Bayer International Institute for Applied Systems Analysis Email: komendan@iiasa.ac.at

### Background

- Jordan has a number of technology choices such as renewable energy sources, oil shale, nuclear power or traditional fossil fuels to satisfy its energy demand
- The aim of our study was to understand visions and discourses about societal, environmental and economic impacts of energy transition in the country as well as perceptions of risks, benefits and costs of various technologies as well as to develop

compromise solutions integrating these various views

# MENA-SELECT project

- Participatory process in Jordan, Morocco and Tunisia
- Stakeholders views on risks and benefits of different electricity generation technologies, including fossil fuels, renewable energy sources, nuclear and shale oil
- Methods: multi-criteria decision analysis (MCDA), Simos negotiations and criteria ranking, DecideIT

## Results

- Evaluation of each technology according to the set of criteria for its contribution to national development objectives and local conflicts sensitivity
- Identification of potentials for conflicts in views of different stakeholders groups: policy-makers, financing sector, academia, youth, NGOs, local communities
- Identification of preferable alternatives for each stakeholders group and for compromise solutions between different groups





Mildly confident (80-90 % contraction of inter —

Not confident (90+ % contraction of interval)

**Conclusion:** "Alt. 1 Utility-scale Photovoltaic (PV)" is the best alternative, with "Alt. 5 Nuclear" as runner up. The Alt. 1 > Alt. 5 statement is mildly confident, since the information provided in this decision basis supports a strict ranking with a degree of 16 %, whereas the reverse statement is not supported.

Group	Most important criteria	Least important criteria
Civil society and NGOs	Electricity system costs	Non-emission hazardous waste and domestic value chain integration
Finance and investment	Global warming potential, safety and electricity system costs	Domestic value chain integration
Academia	Electricity system costs	Global warming potential, non- emission hazardous waste and pressure on local land resources
Future decision makers	Safety and electricity system costs	Domestic value chain integration and non-emission hazardous waste
Local communities	Global warming potential, safety and electricity system cost	Domestic value chain integration
Decision-makers	Safety	Pressure on local water resources and non-emission hazardous waste

#### Recommendations

- Favorable environment should be created for investment into renewable energy sources accompanied with a reduction of investment costs and provision of positive socio-economic impacts
- Energy infrastructure projects should become an opportunity to make communities a better place to live. Further efforts are needed to involve all relevant stakeholders but also laypeople into decision-making processes in energy transition
- Conditions should be established for social, environmental and economically sustainable energy transition

#### References

 Komendantova, N., Ekenberg, L., Marashdeh, L., Al-Salaymeh, A., Linnerooth-Bayer, J., and Danielson, M., (2018). Energy security concerns dominating over environmental concerns? Evidence from stakeholder participation process on energy transition in Jordan. Climate 6 (4): e88