IIASA

SMART GAMING FOR INFORMING POLICY

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For systems analysis to offer actionable policy insights to the complex challenges of sustainability transitions it is evident that our methods and tools must better incorporate the complexity of human decision-making. Policy gaming can be used to examine stakeholder cognition and interaction, and through empirical observations can be incorporated into different system analysis modeling approaches. Simulation games have unique potential to expand the understanding of stakeholder dynamics, teasing out behavioral pitfalls that may prevent effective the collaboration, coordination, and collective action necessary to foster transition towards sustainability.

Policy exercises using simulation games are designed to include diverse worldviews as one of the critical factors determining the policy process outcome; thus, it is anticipated that role-playing stakeholders will argue for potentially conflicting policy options trying to push their favorite options. The gaming is organized in a way to enable these different views, or cultural discourses, to be represented. These contending stakeholder views affect the negotiation process, together with policy feedback generated from system models shapes decisions and outcomes in a dynamic policy exercise.

Policy gaming uses gaming-simulation to assist organizations in policy exploration, decision making and strategic change. The process combines the rigor of systems analysis and simulation techniques with the creativity of scenario building and the communicative power of role-play and structured group techniques. Reality is simulated through the interaction of role players using non-formalsymbols as well as formal, computerized sub-models where necessary. The technique allows a group of participants to engage in collective action in a safe environment to create and analyze the futures they want to explore. It enables the players to pre-test strategic initiatives in a realistic environment. Gaming/simulation proves an appropriate process for dealing with the increasing complexity of organizational environments and the problems of communication within complex organizations and their networks.

Geurts, Jac LA, Richard D. Duke and Patrick AM Vermeulen
Policy gaming for strategy and change
Long Range Planning 40, no. 6 (2007): 535-558

WATER ENERGY NEXUS GAME

Experiencing complexity of Nexus decision making

The **Water-Energy Nexus Game** gives participants a unique opportunity to get an insight into managing the water needs of energy production. Such insight can lead to improvements in water management leading to improved water systems' resilience. It was developed as a training tool to be used in workshops in Southern African Development Community (SADC) countries.

Participants have to respond to the problem of addressing water needs of population, industry, and agriculture, at the same time facing challenges of climate change. The lessons of the game apply broadly to many interconnected Water-Food-Energy Nexus challenges.
Players take up roles of policy makers in two countries that have access to the same river. They have to match the increasing water demand with adequate supply. Achieving this requires establishing of effective collaboration and information exchange between stakeholders both within and between both countries. Since the outcomes of both countries are interconnected the game provides an opportunity for practicing conflict resolution and cooperation at the international level.

Water-Energy Nexus Game gives players a strategic overview of interconnections between water and energy in the context of security and sustainability at the transboundary level.

Applications
The game was developed in collaboration with the International Institute for Applied Systems Analysis in cooperation with UNDP Cap-Net, SE4All, Water-Net, South Africa Water Research Commission. It is designed as a part of the the capacity development program for energy sector professionals (ministries, power plants, capacity building institutions, etc.) in SADC countries.

PLAYER	MODERATOR	
8-24	1	2-3 HRS / DEBRIEFING MIN. 1 HOUR

BENEFITS

Learn about the problem of balancing increasing water demand and conflicts between different sectors and countries around water supply

Experience problems and opportunities connected with transitions in complex systems with multiple stakeholders

Discover the potential of new technologies for increasing energy and water use efficiency

Practice collaboration between various stakeholders with different goals, representing different organizations

FLOOD RESILIENCE GAME

The **Flood Resilience Game** is an educational game that allows players to experience, explore, and learn about the flood risk and resilience of communities in river valleys.

The game is designed to help participants – such as NGO staff working on flood-focused programs – to identify novel policies and strategies which improve flood resilience.

The game is set in a community living in an area exposed to floods, occurring with different severity. Players take roles of members of different citizen groups (workers, farmers, entrepreneur, financial services agent), local government and water board officials.

The direct interactions between players create a rich experience that can be discussed, analysed and lead to concrete conclusions and actions.
This allows players to explore vulnerabilities and capacities leading to an advanced understanding of interdependencies and the potential for working together.

PLAYER	MODERATOR	
8-16	1	2-4 HRS / DEBRIEFING MIN. 1 HOUR

BENEFITS

Experience the effects on resilience of investments in different types of "capital" – such as financial, human, social, built, and natural
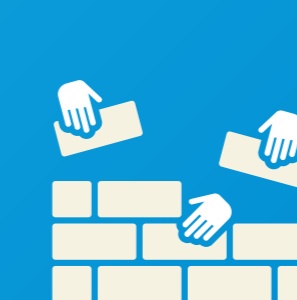
Improve understanding of the influence of preparedness, response, reconstruction on flood resilience
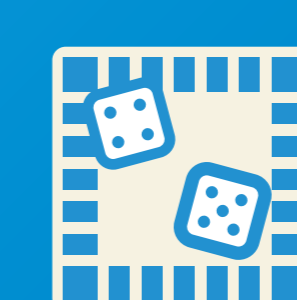
Demonstrate the benefits of investment in risk reduction before the flood strikes

Explore the complex outcomes on the economy, society and the environment from long-term development pathways

Discover the types of decisions needed to avoid creating more flood risk in the future, incentivizing action before a flood through enhancing participatory decision-making.

Experience all these complex ideas with a simple and concrete game elements so that participants can connect with their daily realities.