SUSTAINABILITY, COLLABORATION AND UNCERTAINTY: A SCENARIO BASED EVALUATION OF WATER ISSUES FOR DESERT CITIES USING COMPUTER SIMULATION

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How sustainability, collaboration and uncertainty are evaluated using a computer simulation model?

The Decision Center for a Desert City (DCDC) supports and conducts climate, water, and decision research. We also develop a interactive multi-user scenario based application which is more mobile and flexible in terms of usability and development to bridge the boundary between stakeholders and policy makers to put our work into hands of those whose concern for a sustainable future of Phoenix.

Our computer interactive application focuses on building a real-time scenario and multi-user interaction to make collaborative decision on policies for water issues.

Version 1.0 of our Decision Game 2012 application model includes:

1) Web Application interface focusing on the "Empathy" Scenario
2) A platform independent multi-user interactive scenario – Social Goods game
3) Flexibility, mobility & access to all platforms

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COMPUTER SIMULATION MODEL APPROACH TO ACHIEVE REAL-TIME SCENARIO EXPERIENCE FOR EFFECTIVE DECISION MAKING

- Decision Game 2012 version 1.0 simulation model is coded latest Microsoft Technologies for customization and database independency.
- Made accessible in various platform as a web platform and made adaptable to all media device.
- User friendliness achieved by more aesthetic and dynamic User Interface for real-time scenario experience.
- Multi-user interaction in real-time for better communication
- Narrative story line for each rounds helps user to experience real gaming scenario.
- Flexibility in module integration.

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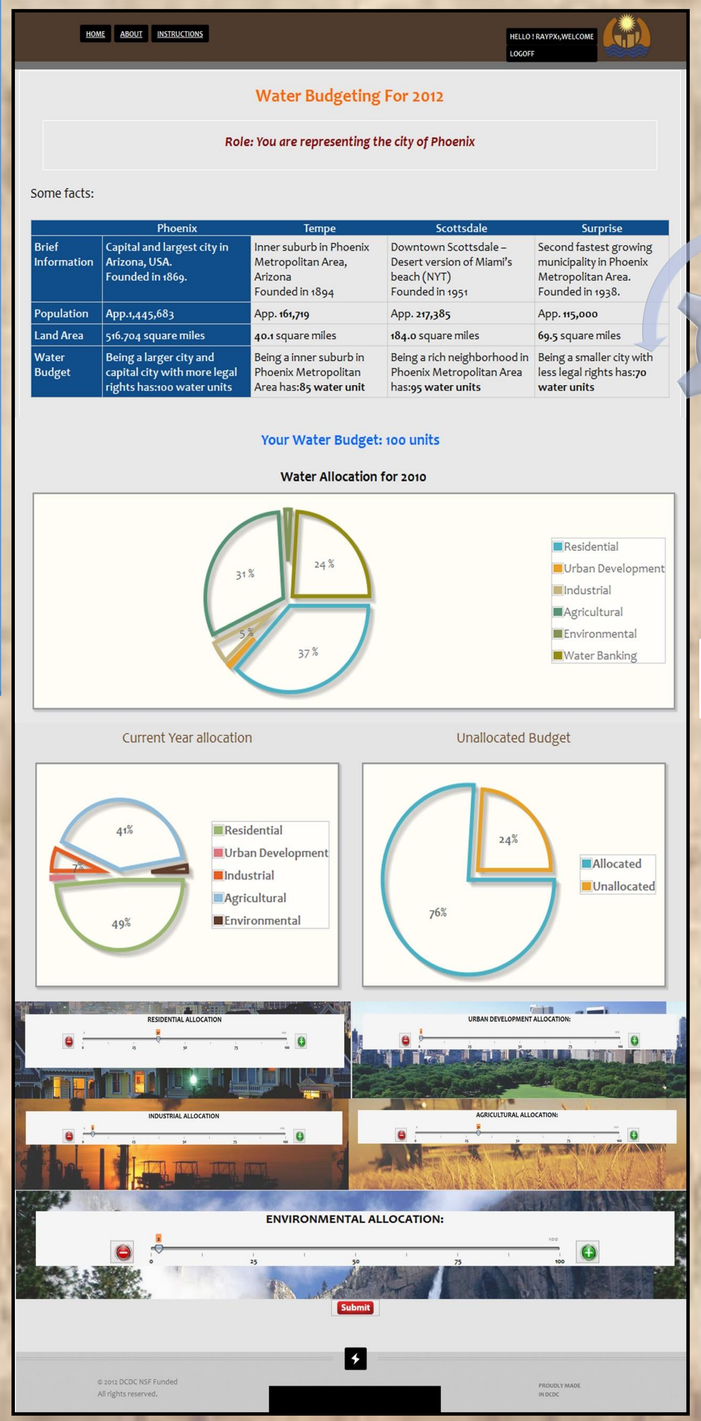
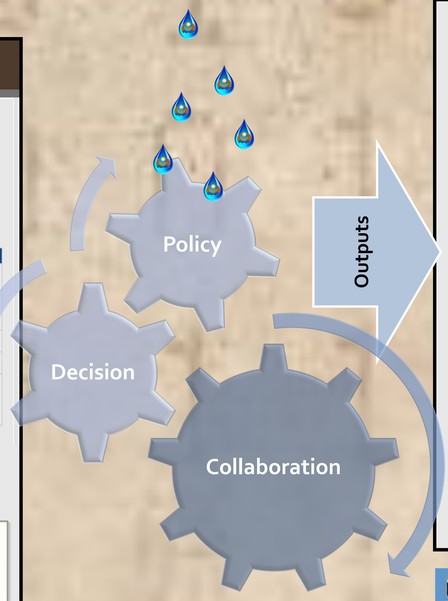
- **FOCUSES ON**

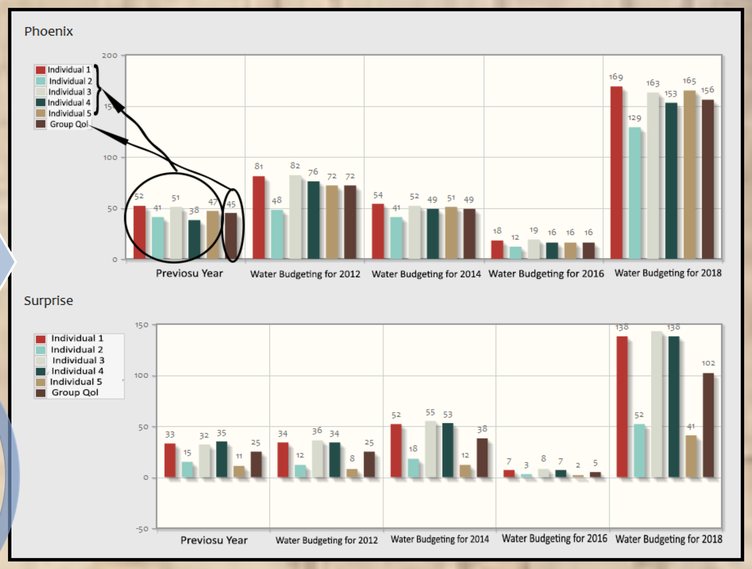
  Policy makers, Stakeholders, Decision makers

A User Interface of the Simulation model to help player to understand the actual real-time scenario





Variation in Quality of life identified between an individual and group with respect to their empathy and collaboration



Interface & Access to Decision Game V 1.0 – 2012

http://suscon.tsc.asu.edu:81

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RESULT

On running the experiment on a subject of 68 people using the computer simulation model, different variations are identified in Quality of Life result between individual and group

- Accuracy of result is high on running the experiment on a simulation model rather as a paper document format.
- Multi-user interaction provides a best outcome
- Running different rounds for a single scenario model helps to estimate the variations in empathy of a user.
- Survey helps to determine the individual empathy.
- The simulation model helps to calculate the quality of life for a particular individual as well as a group to get a different perspective over result.

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CONCLUSION

Making right decisions on water issues is one of the main problem faced by policymakers, decision makers and stakeholders in an environment. Applying a state-of-art technology in developing a computer simulation model helps in efficient decision making by better understanding.

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ACKNOWLEDGEMENT

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