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Water Management: The Decision Making Process

By

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Purpose of the Study

- The decision making process used by water managers.
- Identification of the best practice approach to combat extended drought conditions.

Significance of the Study

- Effects of extended drought conditions.
- By 2030, one-third of humanity, almost three-billion people, will face severe water scarcity (Balaban, 2010).

Prologue

- Fresh water is the bases for quality of life.
- Economic stability begins with water.
- Extended drought conditions often result in adverse economic consequences.
- Fresh water is the foundation for sustainable economic growth.

Statement of the Problem

- The specific problem, how do water managers go about their day-to-day operations?
- Pressure on the world's water resources has increased, restraining social and economic development that has threatened ecological values (Hedelin, 2007).

Conceptual Framework

- Municipal water districts (MUD).
- The MUD process is proven method.
- The MUD process captures fresh water which is pumped back to the surface for storage.

The Study Methodology

- The qualitative method was used.
- A semi-structured interview process was used.

Research Findings

- Findings concluded the MUD was the historical and present method of water management.
- Water conservation is a up and coming area of development.
- Brackish well drill and reverse osmosis (R/O) associated with desalination and water blending.

Conservation

- Water conservation is an continual education process for the public.
- Water conservation can be found in every sector of water management.
- Conservation could include monetary incentives to encourage public support.

Brackish Well Drilling

- Brackish well drillings offers water management alternatives in support of fresh water.
- Brackish drilling coupled with desalination & a water blending process offers change.

What Does This Mean?

- Water management change is on the horizon.
- Gradual change in how water managers go about their day-to-day decision making process.
- Base change has been brought about by drought conditions and technology.

Desalination – Attributes

- Historically, desalination with the R/O process has a much higher cost.
- Desalination and saline disposal Vs. the environment.

Desalination and the Public

- The general public anticipate adequate potable water on demand.
- The public supports skilled water management personnel.
- The general public is not receptive to higher water prices.

Water and Economics

- This is a correlation between fresh water and the economy.
- Numerous problems arise with a lack of fresh water.

Regional Economics

- The Edwards Aquifer and Lake Travis located in Austin, Texas offer an example of drought.
- Extended drought conditions has left the lake level down 45 feet.
- Results to the economy have lower real estate values, employment reduction, business closings, and less public traffic.

Matagorda County, Texas

- Rice farmers not allowed to utilize river water for irrigation due to extended drought.
- Infrastructure debate between industry, drinking water supply and farms.
- Matagorda County, Texas is near a major river and on the Texas Gulf Coast.

Harris-Galveston Subsidence District

- Between a rock and a hard place.
- Rule of law, limited drilling in a two-county region with over 6-million people.
- Are there other alternatives?

Global Repercussions MENA

- The Middle East and Northern Africa.
- Quality of Life.
- Life expectancy.
- No present long-term solutions.

Extended Drought Conditions Africa

- Resulting economic impact.
- Resulting local and regional fiscal impact.
- Present state of Northern Africa.

Philanthropic Effects

- Philanthropic collective cumulative efforts represent billions of dollars.
- Philanthropic efforts represent immediate life savings consisting of food & water drops.
- Philanthropic efforts do not bring closure.
- African philanthropic efforts offer life sustainability and enablement.

Philanthropic Closure

- Philanthropic efforts must include water management practice.
- Water is the base for life sustainment.
- Water and economics.
- Correlation between water management and politics.

Water and Environmental Conflict

Fracking

- Fracturing associated with oil & gas.
- Horizontal drilling Vs. vertical drilling.
- Brackish well drilling with desalination & water blending.
- Water gathering lines.
- Disposal wells.

The Future Cost of Water – Cause & Effect

- Water cost will rise.
- Property values will rise with adequate water supply.
- Quality of life and life expectancy will rise.
- Economic downturns associated with extended drought conditions can be mitigated.

Implications for Long-Term Water Leadership

- Transformational leadership will be required to combat future water scarcity (McGuire & Kennerly, 2006).
- Present water managers need forward looking statements to meet future water needs.

Study Conclusion

- Water managers need to develop a solutions approach to water scarcity.
- Define a benchmark approach for continued change.
- Collaboration between water managers.
- Water management change is inevitable.

Acknowledgement

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- We encourage each participant at WSI to advance water management knowledge with global participation and personal input.

Future Water Technology

- “Knowledge is power” (Bacon, 1626).
- Fresh water is the bases for quality of life.

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