



CONFLICT MANAGEMENT AND RESOLUTION

**FROM CRISIS
TO RISK MANAGEMENT**

Paulo Afonso Romano

Consultant

Conflict management and conflict resolution: From crisis to risk management

- Conflicts as part of human diversity
 - Complexity and dynamics



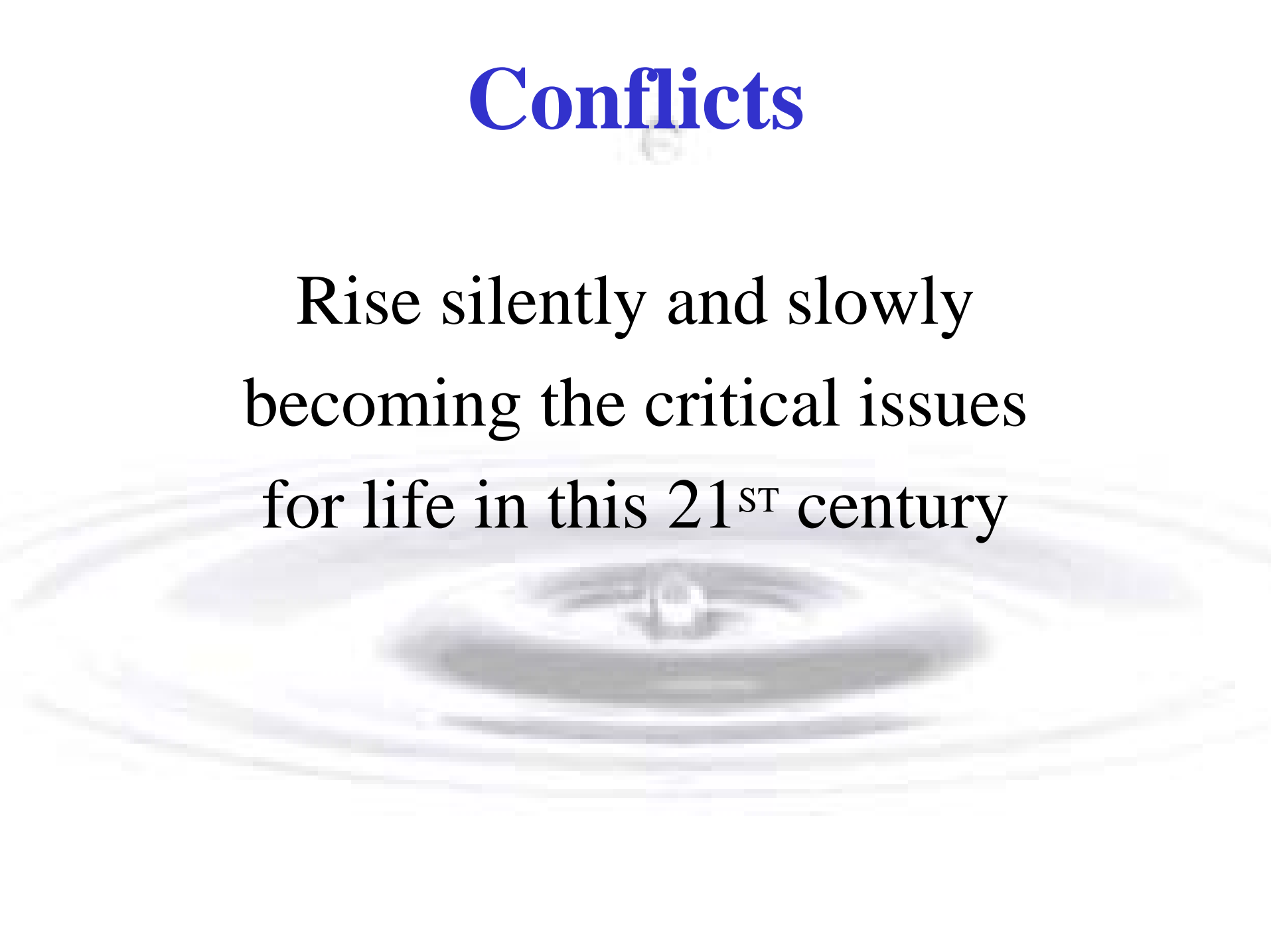
Nature

A law
of human nature

We hesitate to act until
a crisis confronts us

Conflicts

Rise silently and slowly
becoming the critical issues
for life in this 21ST century



As populations and economies grow and pass the hydrologic limits, so, too, grow the dangers of conflict over water

Water scarcity and environmental degradation also lead to conflict

Different Uses of Water

Navigation

Riparian Ecosystems and Biodiversity

Fisheries / Aquaculture

Spiritual / Cultural Resources

Recreation

Urban Amenities

Tourism / Ecotourism

Water Supply

Hydro Power

Sewage Disposal

Industrial

Mining

Irrigation

Ecological Preservation

Conflict management and conflict resolution: From crisis to risk management

- Source of conflicts
 - Economic
 - Political
 - Social
 - Religious
 - Ethnic
 - Environmental
 - Combinations: Environment X Legal X Social, etc

A radical rethinking of our values and priorities
to improve our political systems is urgent

Water belongs to the Earth and all species

No one should be allowed to utilize water
without observing the social, legal and ethic
implications

Industrial Pollution

Reservoirs

Dams

Overgrazing

Litter

Mining

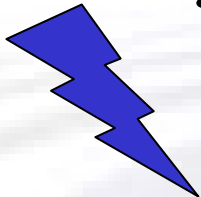
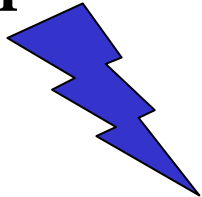
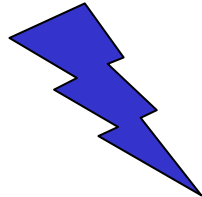
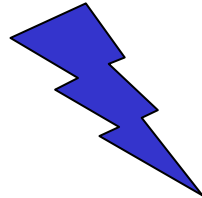
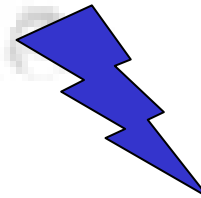
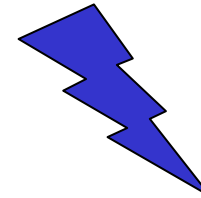
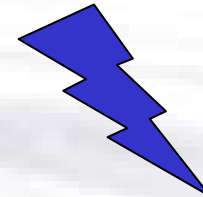
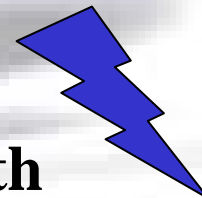
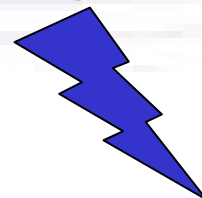
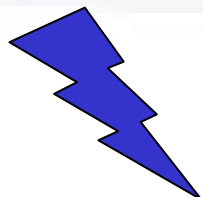
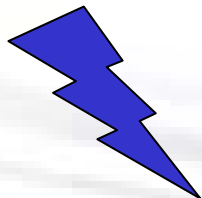
RISKS

Clearcutting

Agricultural Run Off

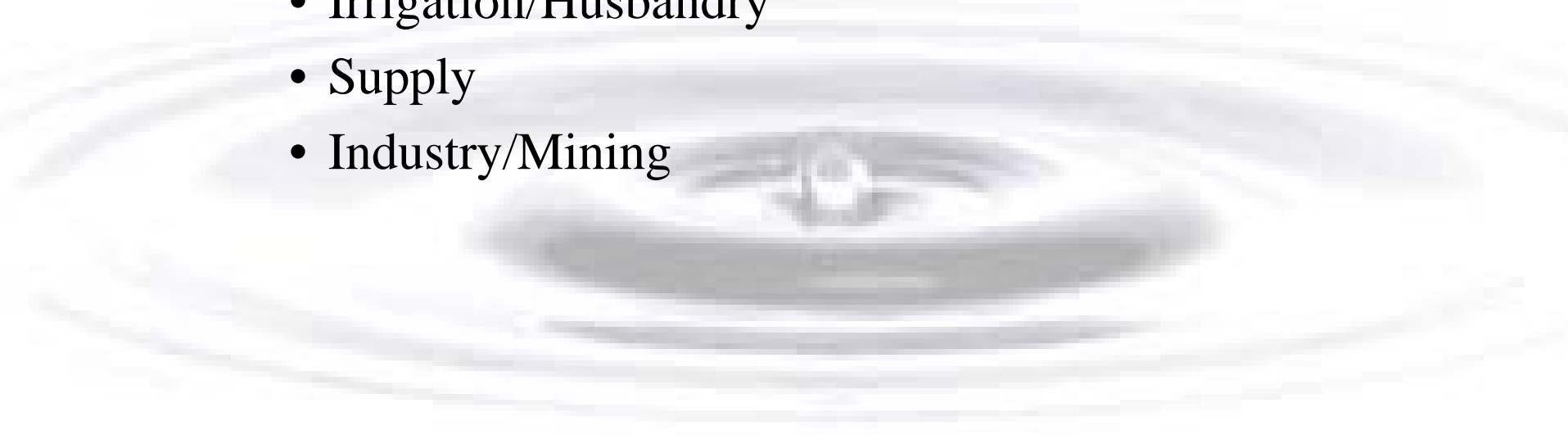
Irrigation Diversions

Channelizing Urban Growth



Conflict management and conflict resolution: From crisis to risk management

- Different uses of water
 - **Exploitation**
 - Irrigation/Husbandry
 - Supply
 - Industry/Mining



Conflict management and conflict resolution: From crisis to risk management

- Different uses of water
 - Non exploitation
 - Hydroelectric generation
 - Aquaculture/fisheries
 - Tourism/leisure
 - Transportation
 - Environment
 - Maintenance of biodiversity

Conflict management and conflict resolution: From crisis to risk management

- Types of conflicts:

Apparent:

**Most common among
exploitation uses
and related to quantity**

Conflict management and conflict resolution: From crisis to risk management

- Types of conflicts:

Apparent:

- Irrigation vs. Supply
- Among Irrigators
- Hydroelectric Energy vs. Other uses

Conflict management and conflict resolution: From crisis to risk management

- Types of conflicts:

Non Apparent:

**Most common among
non-exploitation uses
and related to quality**

Conflict management and conflict resolution: From crisis to risk management

- Types of conflicts:

Non apparent:

- Environmental demand vs. Pollution
- Underground water vs. River
- Hydroelectric Energy vs. Other uses

(Ethic question: Loss of lives)

Agricultural & Municipal interests
want to take more water out of the river



Environmentalists want
to leave more water in it



Common recommendations for water flows
are not included in management planning



Conflicts

Conflict management and conflict resolution: From crisis to risk management

- Approaches for conflict management resolution
 - Acceptance of the existence of the problem or its potential to occur
 - Understanding the problem
 - Characteristics (local, uses, etc)
 - Repercussions (social, environmental, legal, criminal, etc)
 - Discussion with all interested parties as an integral component to achieve solutions

Conflict management and conflict resolution: From crisis to risk management

Preliminaries and concepts to be observed

- Sustainability
- Collective interest of community
- Balance/**re-balance**
- Multiple uses
- Law compliance
- Existing plans (hierarchy of priorities)
- Reliable information (formal or informal)

Conflict management and conflict resolution: From crisis to risk management

- Conditions to solve conflicts
 - Respect of divergences
 - Respect of legal and “common use” rights
 - Coordination of basin committees or local associations

Conflict management and conflict resolution: From crisis to risk management

Practical cares

- Observance of possible consequences resulting from the conflict between two different uses
- Observance of Ecological demand
- Conflict resolution as base for preventing new conflicts
 - Improvement and diffusion of information
- Avoid making new conflicts originating from unfulfilled resolutions

Conflict management and conflict resolution: From crisis to risk management

What should be done?

**Better than solving conflicts
is avoiding them**

Conflict management and conflict resolution: From crisis to risk management

How to avoid conflicts?

- Conserve water in nature
- Use water rationally
- Develop a master plan
- Build storage systems
- Set up laws with new concepts and instruments for water use and management
- Organize democratic management systems with public participation

Water in Brazil

- Although Brazil is a rich country in water resources (except in the semi-arid region), we must remember :
- Uses enormous amounts of water for agriculture, mining and manufacturing, drinking and sanitation
- The water is used and polluted in / by these processes
- Until recently there were few controls, difficult to enforce
- If these current trends continue, water will be in short supply

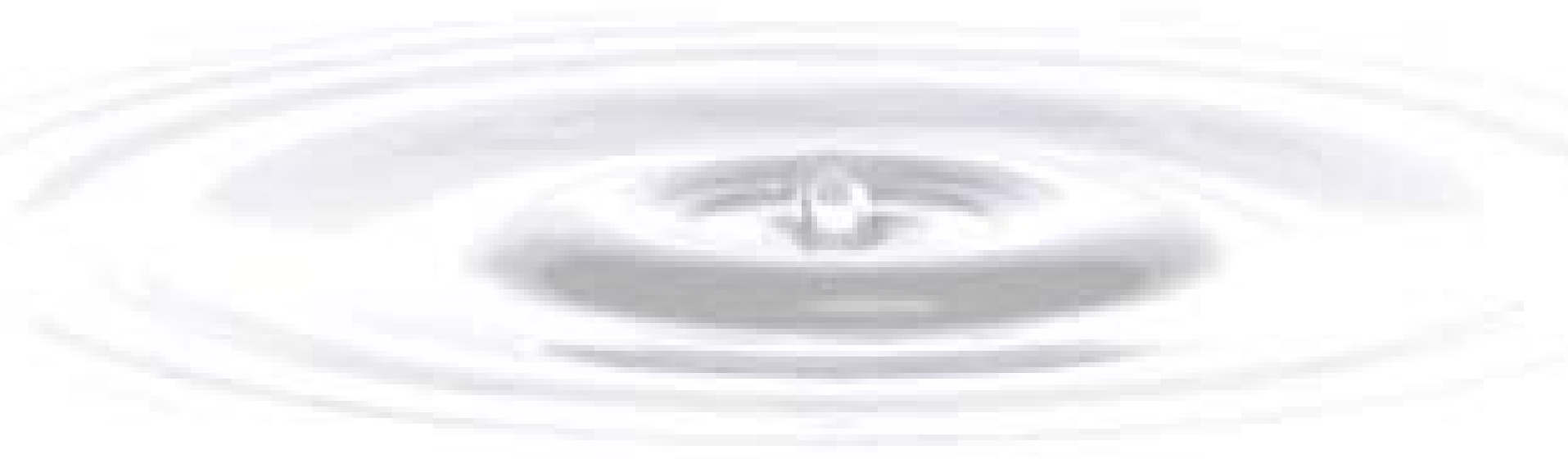
Some conflicts in Brazil

- Water transfer from the Piracicaba River Basin to supply São Paulo City
- Piranhas-Açu - Water to semi-arid regions in Paraíba and Rio Grande do Norte states
- Water transfer from the São Francisco River to the Northeast (out of its basin)
- Death of the Mãe Luzia River in Santa Catarina

Suggestions for regional development in Brazil's semi-arid region

1. Adapt and coordinate existing institutions related to regional water resources management to develop an overall managerial view point
2. Negotiate an equitable division of existing resources
3. Emphasize greater efficiency for water supply and demand
4. Alleviate short-term needs through using all water already stored, where available and politically viable
5. Develop regional long term hydraulic projects in cooperation-inducing stages

Extensive literature exists on detailed decision-making, but each conflict is special with its own characteristics



Conclusion

Solutions must be tailor made

