

**“ Fifth Botin Foundation Water Workshop (5BFWW)
on “ Ethic Issues In Water And Food Conflicts VS. Cooperation In A
Globalized World”**

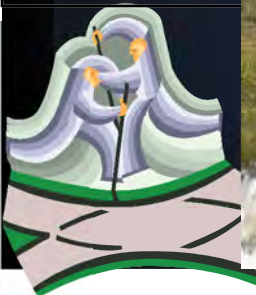
SANTANDER, SPAIN DATE: 28-29 OCTOBER 2010

**“ THE NEED FOR CHANGING BEHAVIOUR AS A TOOL FOR
RESOLVING WATER - FOOD RELATED CONFLICTS
WITHIN
THE NORTH-SOUTH DIALOGUE”**

By

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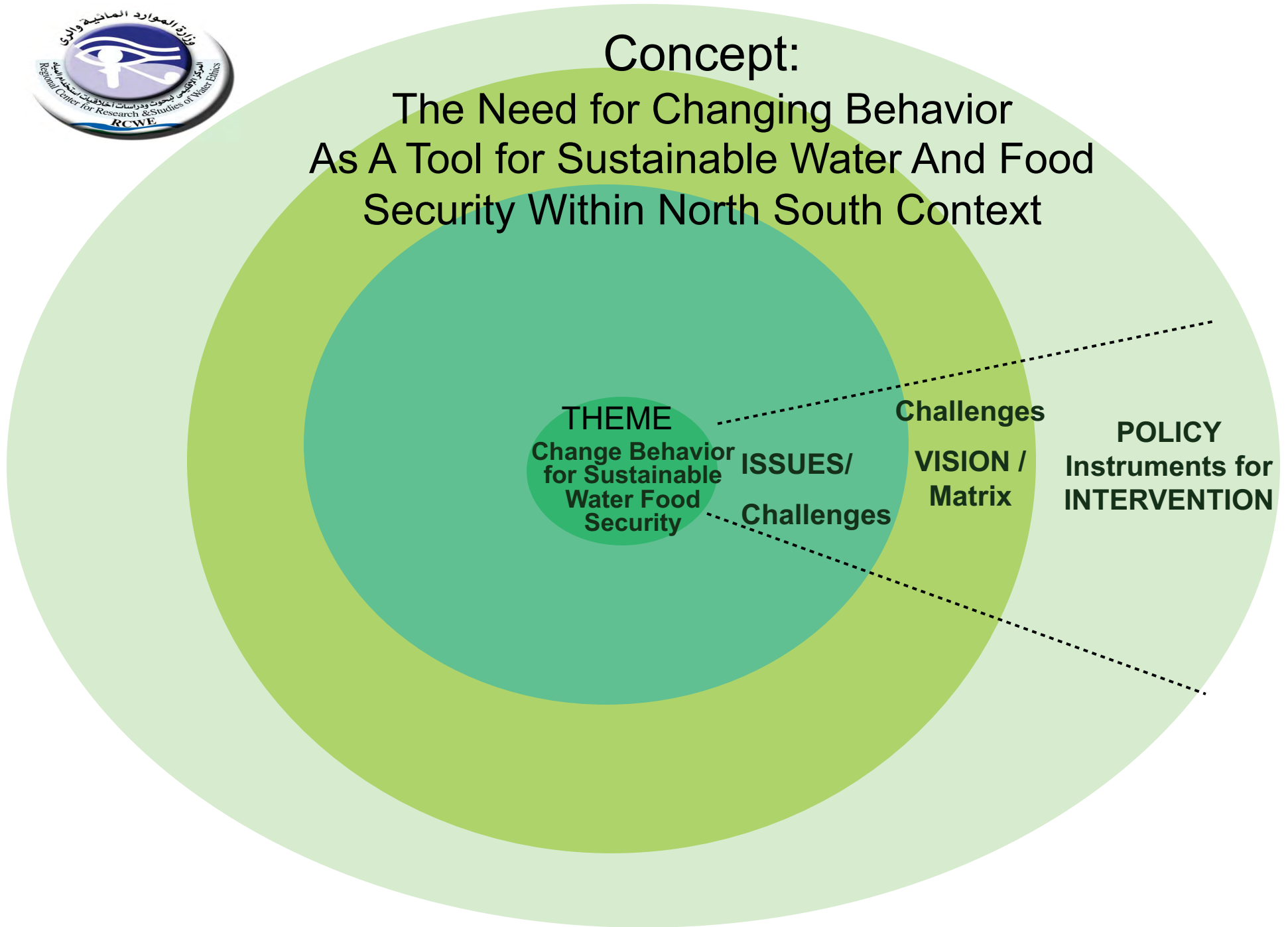
**Regional Center for Research and Studies of
Water Use Ethics**





Concept:

The Need for Changing Behavior
As A Tool for Sustainable Water And Food
Security Within North South Context



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1. Introduction

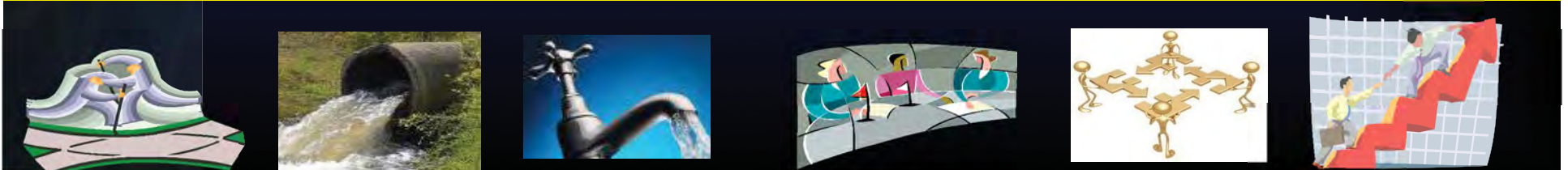
1.

- 1.1 Water and Food Related Conflict in Relation to The Theme of Changing Behaviour for Sustainable Water and Food Security, Why Bother?
- 1.2 The Right to Food,
- 1.3 Defining Issues of : Water and Food Insecurity, Malnutrition, Hunger, Poverty



Introduction: Why Bother?

Literature has repeatedly referred to the need to change behavior and the way we think rather than be satisfied with what is going on of “the business as usual ”conduct. (Prof. Falken Mark and Prof. Peter Rogers, Prof. Ramon Lamas and others in managing water and International Waters for sustainable use)



Why Bother? (continued)

The scene of today's media is dominated, repeatedly by staggering reports on global water and food crisis, soaring crop prices and demand for biofuels raise fears of political instability.

➤ The Guardian reported on Saturday 3rd of November 2007, "Global food crisis looms as climate change and fuel shortages bite".



Why Bother? (continued)

The dramatic description of the situation is described as follows:

"Empty shelves in Caracas. Food riots in West Bengal and Mexico. Warnings of hunger in Jamaica, Nepal, the Philippines and sub-Saharan Africa. Soaring prices for basic foods are beginning to lead to political instability, with governments being forced to step in to artificially control the cost of bread, maize, rice and dairy products"

Source: The Guardian, Guardian (November 3rd, 2007), in an article entitled "Global food crisis looms as climate change and fuel shortages bite", London.



Why Bother? (continued)

- Boycotts have become commonplace.
- Argentines shunned tomatoes during the recent presidential election campaign when they became more expensive than meat.
- Italians organized a one-day boycott of pasta in protest at rising prices.
- German leftwing politicians have called for an increase in welfare benefits so that people can cope with price rises.



Why Bother? the 21st Century is labeled as the Century of water

the 21st Century is often labeled as "the Water Century" to differentiate it from "the Oil Century" of the 19th Century:

✓ The *labeling*, here, means to put emphasis on the state of resource, whether water or oil, and how far it is going to be depleted, or exhausted in supporting the wellbeing of humanity.

✓ Consequently, It give a focus and sharpens the strategic thinking of leaders around the world, in their strenuous efforts to have a world dominated by peaceful resolution of conflicts over resources, and ensuring their sustainability.



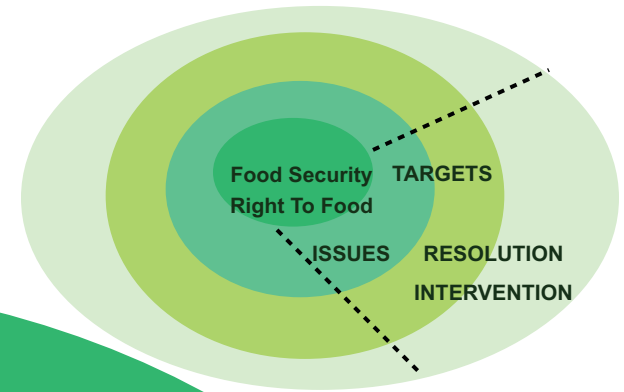
Why bother: The need to extend change behavior theories and practices to communities (continued)

- ✓ Considerable attention has been given in the literature to models of individual behaviour change per se – But much less attention has been given to models or theories that attempt to understand behaviour change within groups, organisations and whole communities.
- ✓ The design of programs to reach populations requires an understanding of how those communities work, their barriers and enablers to change, and what influences their behaviours in general.





DEFINITIONS



1. Definitions:
Food Security,
Food
insecurity,
Malnutrition,
Hunger, and
Poverty

Right To Food

Food Insecurity: Hunger, Malnutrition, Poverty

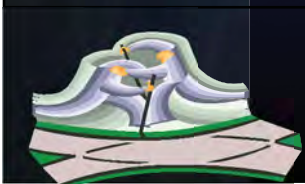
- **The report of the 1992 FAO/WHO international conference on nutrition states: "Food security is defined in its most basic form as access by all people at all times to the food needed for a healthy life.**
- **Food security has three dimensions: assurance of a safe, nutritionally adequate food supply at national and household levels; a reasonable degree of stability in the supply of food throughout each year and from one year to the next; every household having physical, social and economic access to food sufficient to meet its needs."**
- **In view of these definitions one could come up with a definition of what is considered as food insecurity**

Famine

- In an era of unparalleled affluence, famine is still a recurrent threat for communities in Africa and elsewhere.
- Famines caused an unprecedented 70 million deaths during the *twentieth century*.
- Eradication of famine in Europe and near eradication in Asia in the *second half of the twentieth century* was a milestone in the history of famine.
- *Causal factors as well as community and individual responses* to famine vary greatly according to the local political, cultural, and economic context.
- What has worked in Asia does not apply for Africa, and new strategies to mitigate the effects of and foremost to prevent famines are required.
- Efforts may be hindered by the rising threat of global

The Right to Food: Commission on Human Rights

- The Special Rapporteur on the right to food submitted his first report on the global food crisis (A/HRC/9/23) in September 2008.
- The report is submitted in accordance with Human Rights Council resolution 9/6 on the follow-up to the seventh special session of the Council on the negative impact of the worsening of the world food crisis on the realization of the right to food for all, adopted by the Council at its ninth session.
- In the report, the Special Rapporteur summarizes the efforts that have been made since by Governments and international agencies to build resilience against the risk of future crises.



2. The Problematicque , and Root Causes

2.

- 2.1 Food Crisis is Dominating World Scene (Images from A Globalized World)
- 2.2 Root Causes of Challenges / Problems
- 2.3 Linkages of Water, Food and Climate Change in their Complexities
- 2.4 Conflict in Darfur (Sudan)
- 2.5 Water and Food Divide: Is It A North-South, OR Is It A Rich-Poor, OR Is It a Globalized problem.





THEME
Change Behavior
for Sustainable
Water Food
Security

1. Causes

- Population Growth
- Biofuels
- Food Aid
- Biotechnology
- Trade Rules

**2. Water, Food
and Climate
Change
Complexity**
- Darfur-Sudan
AN Example

THEME:

Change Behavior
for Sustainable
Water Food
Security

ISSUES
Challenges

Challenges
Vision:
Matrix

POLICY
Instruments for
INTERVENTION

3. World Food Divide
Rich/Poor – North South

The Problematicque: Access to food is the Problem

Girls waiting for food in Burundi

Source: [International Committee of the Red Cross](#)



Access to Food is the Problem

A child holding her mother's hand waits in line to receive food at a feeding centre run by UNICEF,

Source: the World Food Programme and other humanitarian partners, in Isdorto Village in the Southern Bakol Region of Somalia, 26 January 2006.



Trade Rules: The Trade Trap

❑ Subsidization of agricultural commodities and managed trade by Rich countries (US&EU&Japan) generated internal surpluses. However, the poorer countries found their internal markets dumped by rich countries. Africa's share of global trade in agriculture has fallen from 15% in the 1960s to 3.2% in 2006

❑ In 2009, the FAO quoted a figure of \$365 billion per annum as the total subsidies for agriculture paid by the rich OECD countries in 2007, nearly ten times the annual cost of eradicating hunger by 2025.



Malnutrition. Poverty

In the first year of the twenty-first century, 820 million people remain chronically underfed.



Man with grain

Hunger and Malnutrition

Hands in a circle holding grain –
as a sign contributing to poverty in Argentina



Biofuel

Corn, the raw material used to produce ethanol.




Biofuel

- An IMF analysis attributed one third of the 2008 rise in food prices to the influence of biofuels. These petrol additives such as ethanol and biodiesel are manufactured from plant crops as a means of reducing dependence on fossil fuels and potentially cutting carbon dioxide emissions.
- In 2009 one quarter of US grain was converted into transport fuel, enough to feed 330 million people for a year. This production was backed by subsidies of around \$6 billion combined with tariffs blocking imports of the more efficient Brazilian ethanol manufactured from sugarcane. Subsidies also support European targets for biofuels which are pursued largely by acquiring rights to agricultural land
- Anti-poverty campaigners object to the conversion of land and food for rich motorists at a time of global food insecurity. The net saving in carbon dioxide emissions from maize-based ethanol has been exposed as less than 20%. “Second generation” biofuel crops such as jatropha, which can be grown on land unsuitable for food crops, are unlikely to achieve commercial production until 2020.

Source: (<http://uk.oneworld.net/article/view/164713/1/1912>) in developing countries. And (<http://uk.oneworld.net/article/view/164713/1/1912>) in developing countries.

CLIMATE CHANGE in Butan

Piet van der Poel : Millet is one of the more common crops in Bhutan; a good part of it is turned into chang, local beer. In **Trashi Yangtse** seeds are sown in shifting cultivation fields and seedlings are later transplanted into the dry land fields. In this case banning shifting cultivation would render the farmers  dry land fields.



Biotechnology

Cambodian organic rice farmer - rice in hand

Source: Oxfam America



Biotechnology

Genetically modified soya bean?

Angry soya bean with legs –
genetic engineering



Biotechnology And GM

- Genetically-modified (GM) crops, in which a gene of desired characteristic is transposed from one plant to another, are the most extreme and controversial output of the biotechnology companies. Claiming higher yields, and lower chemical inputs,
- GM crops sound like the answer to global food security. Although the technology has so far concentrated on overcoming weeds and pests, it has potential to respond to nutritional needs or drought and salinity brought on by climate change.
- However, GM food technology clashes with the values of food sovereignty as it depends on capital intensive farming and the intellectual property rights are predominantly owned by a single company, Monsanto.
- There are reservations over the capacity of developing countries to establish regulatory frameworks needed to manage inevitable conflicts of interests. Very few countries in Africa have adopted GM crops and 2010 saw the landmark rejection of a modified aubergine plant by the Indian government

Source:<http://roomfordebate.blogs.nytimes.com/2009/10/26/can-biotech-food-cure-world-hunger/?partner=rss&emc=rss>.
<http://www.indiatogether.org/2010/feb/env-btbrinjal.htm>

Water Food Availability Problem

Storage depot with emergency food supplies
in Western Kenya



Sanitation Problem (Continued)

Many shelters lack
proper sanitation facilities



Chiantis, Sanitation Problem Connected to Water Poverty

global divide



Water Poverty

Woman collecting water
in Somali region



Water Poverty

Precious water for desert herdsman,
Niger



Water Accessibility Problem

Villagers collecting water in Burundi



Food Riots

Food Insecurity: 2008 food price riots in Burkina Faso

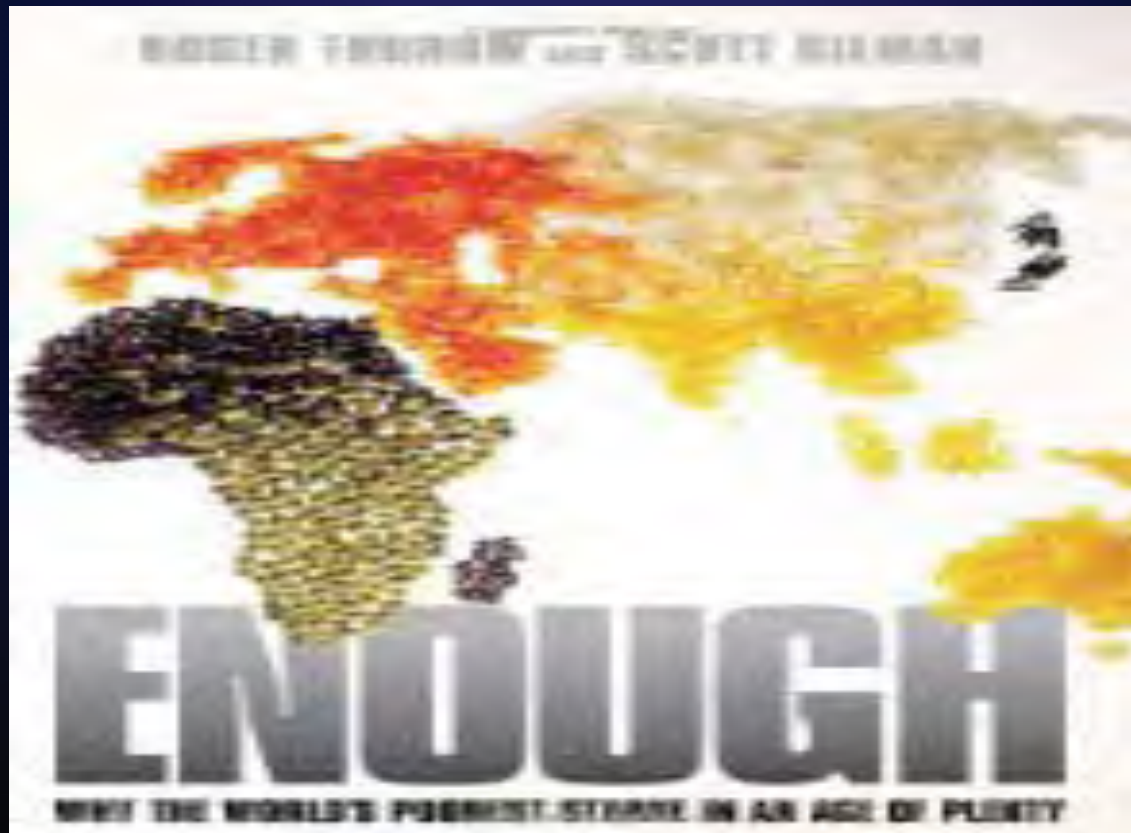


Food Aid

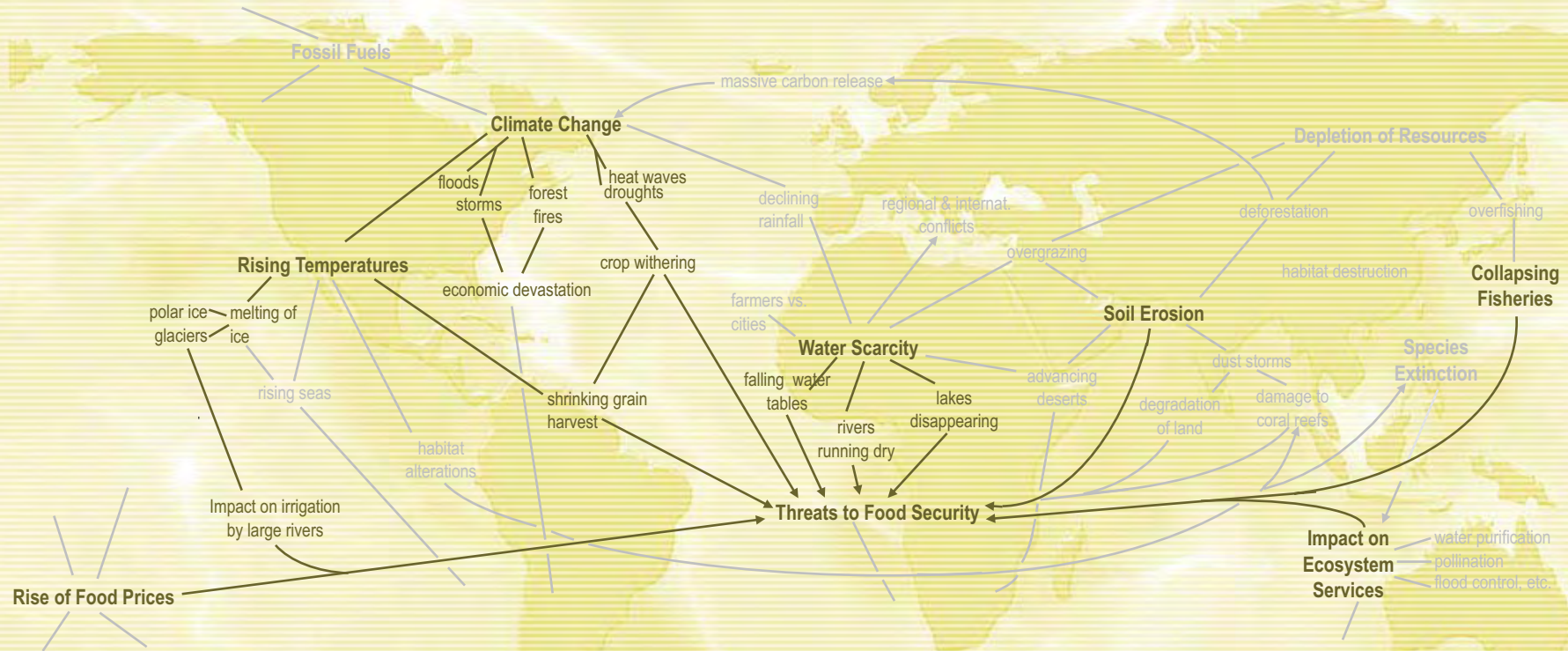
- **The FAO Information and Early Warning System reports and the World Food Programme (WFP) target and prioritizing Africa and many countries in Asian region, where the depth of hunger is most serious, typically delivering food aid for school children, mothers, work-for-food programmes and refugee camps.**
- **The agency aims to support 100 million people in 74 countries in 2010, requiring a budget of \$6.4 billion. About the same number is assisted by international aid agencies, leaving over 800 million beneath the hunger threshold, dependent on highly variable or non-existent domestic safety net arrangements.**

World Water and Food Divide

**Enough: Why the World's Poorest Starve
in an Age of Plenty.**



However, The Threats to Food Security is Global



**the linkage between
Water, food and climate change in their Complexity**

**It is a complexity question.
Water and Food Induced Conflict is most
vulnerable, with rising model of
uncertainty**





what does complexity of water-food induced conflict mean?

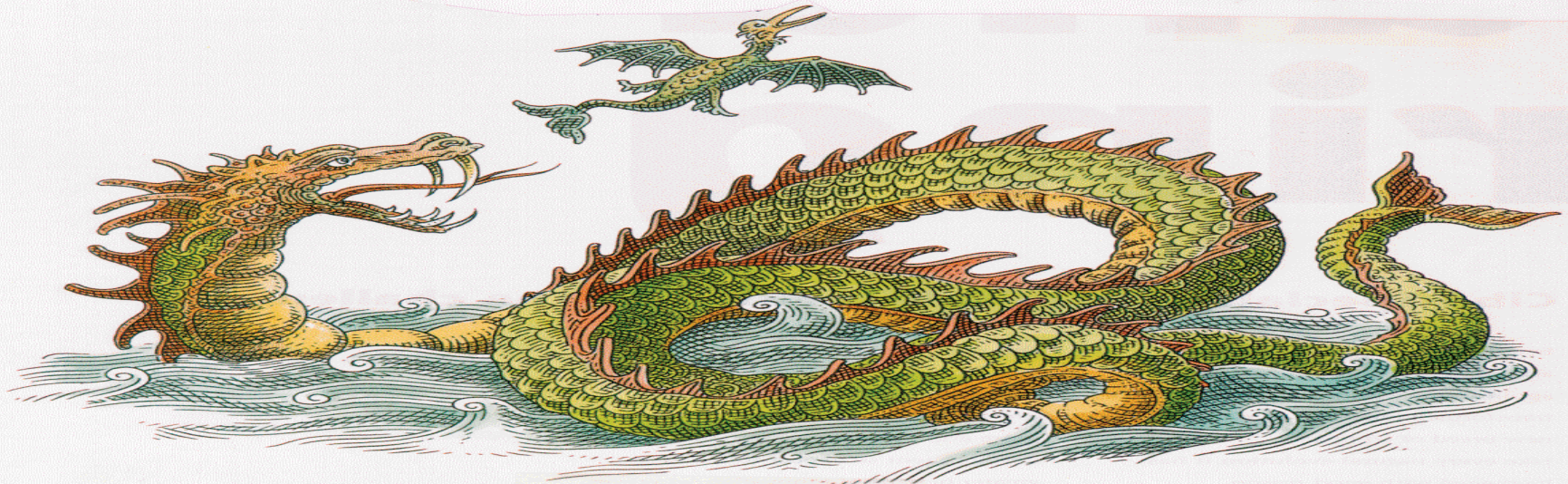
The complexity of water–food Induced Conflict has physical (hard factors) and human factors (soft), interacting together, within a systemic structure. So, if we follow this impasse, we would be able to overcome the existing water- food crisis and its increasing state of insecurity, and to move towards food security in most of the developing countries”.



Water-Food Induced Conflicts and its Complexity

UNCERTAINTY

Uncertainty is an implacable beast



This needs contingency plan parallel to the initial plan, so as to face to the threats of More Poverty and Hunger in most of the world



most challenging are:

- The water cycle is changing?
- Increased risks of climate change?
- Growing vulnerability?
- More disasters ?
- Less water for people?
- Crisis is looming?
- What crisis? Global, Regional and local?

Source: International Hydrological Programme (IHP)



Challenges, problems are interconnected

➤ **Water Pollution**

- Shortages are compounded by pollution. Contamination by fertilizers and pesticides, dumping of municipal and industrial wastewater into rivers and lakes, solid waste deposits along river banks, and uncontrolled seepage from unsanitary landfills -- all these facts are degrading freshwater resources and imposing health risks
- **It is an issue of food security:** as long as poverty and unemployment is widespread in most regions and countries, and the number of countries under water poverty line is increasing.
- **Poverty Level examples:** The most recent figures indicate that poverty affects around 10 per cent of the population in Tunisia, about 20 per cent in Algeria, Egypt and Morocco, and 46 per cent in Mauritania.



Where are the most important gaps to cover by a balanced water strategy and good governance?

Regional Report to Istanbul World Water Forum identified the following priorities:

- ➔ **Food Security**
- ➔ **Unemployment and poverty**
- ➔ **Capacity building and institutional development**

Next will be some messages to alleviate the crisis



filling gaps in water resources research (continued)

WATER AVAILABILITY AND QUALITY

Development of Supply Enhancing Technology

Water Quality: Fundamental and Applied Studies

Improving Hydrologic Forecasting and Prediction

Need for Adequate Hydrologic Data

WATER USE

Determinants of Consumptive Water Use

Agricultural Water Use

Environmental Water Use

WATER INSTITUTIONS

Legal and Political Issues

Economic Institutions

Emerging Social Science Issues



Climate change most challenging problems are:

- ✓ The water cycle is changing?
- ✓ Increased risks of climate change?
- ✓ Growing vulnerability?
- ✓ More disasters ?
- ✓ Less water for people?
- ✓ Crisis is looming?
- ✓ What crisis? Global, Regional and local?

Source: International Hydrological Programme (IHP)



Climate changes (CC) are serious

- “Climate changes are of concern from an environmental viewpoint, and in regard to water supply” in many regions,
- Climate Change has its “social ramifications in many countries and regions of the world”.
- It could result politically to destabilize countries most vulnerable, by causing waves of environmental refugees from several countries, and damage to the economic base of countries. This has happened in the tragic case of Darfur, Sudan”.



Conflict in Darfur (Sudan) triggered by environmental problems

- According to the Intergovernmental Panel on Climate Change (IPCC) Report highlighted that the troubled region of Darfur, indicates that among the root causes of decades of social strife and conflict is the rapidly eroding environmental services in several key parts of the country".
- The reason for water-food crisis in Darfur is the he most serious concerns of land degradation, desertification and the spread of deserts southwards by an average of 100km over the past four decades.
- These are linked with factors including overgrazing of fragile soils by a livestock population that has exploded from close to 27 million animals to around 135 million now.



Key Questions in Changing Behavior

3.

- **Changing Behavior As A Tool for mitigating Water-Food Induced Conflicts**
- **The Biology of the Mind**
- **The Question is How?: The Need For Innovative Tools**





change of behavior theories and approaches?

- ✓ There are *three major research approaches* to studying water-food security-related behavioral change: economics, psychology and social psychology and sociology, including the sociology of technology. The boundaries between these disciplines are not clear-cut.
- ✓ However, there is a need for a detailed study, to give a comprehensive presentation of all research and the various approaches that exist within these disciplines.
- ✓ And the focus is on research that is relevant for water-food security and the design and evaluation of the demand-side management programmes.

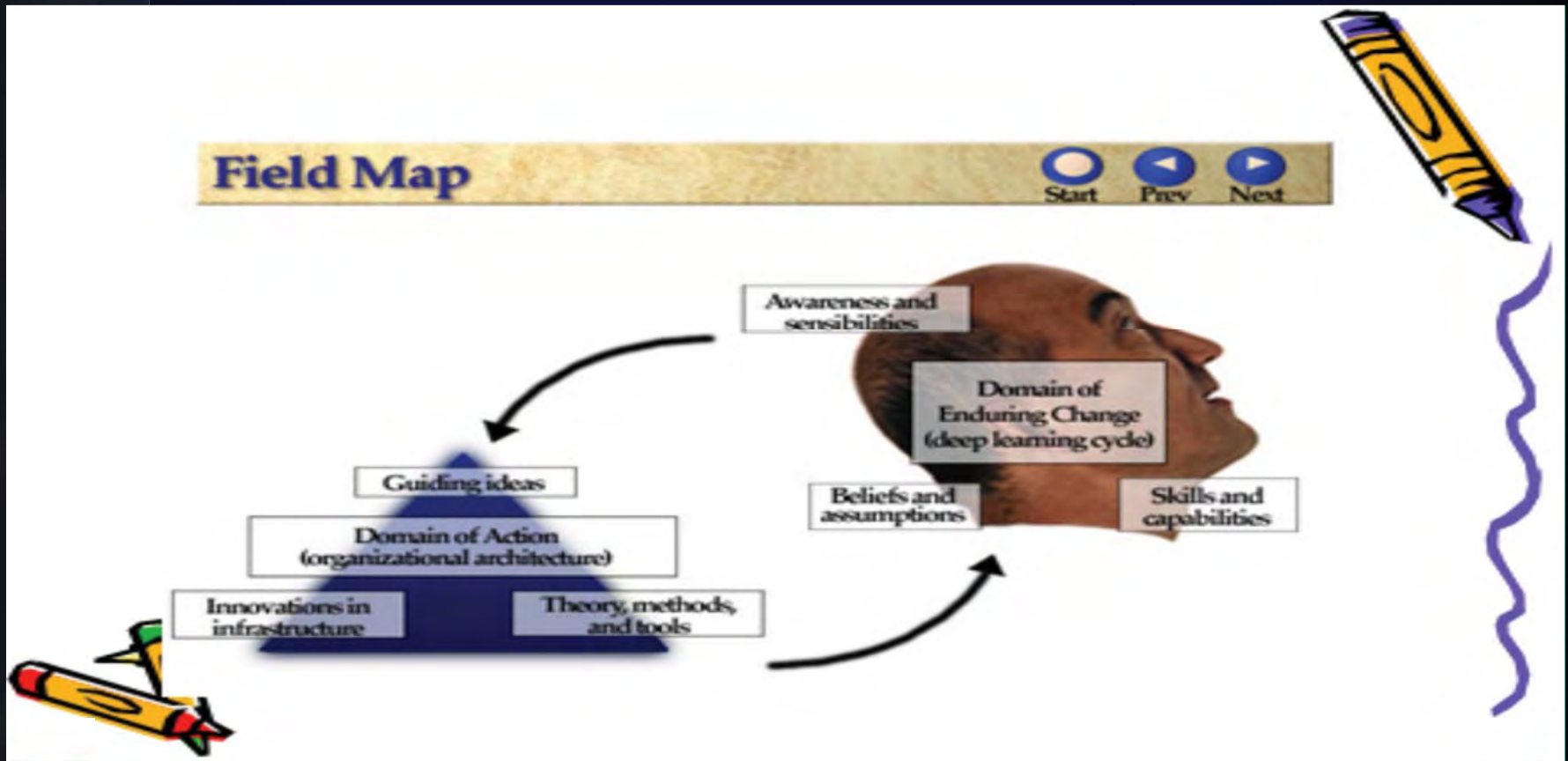


Change Behavior Theories and Approaches (continued)

- ❖ In England, there is a good practice for changing behavior and getting communities to be involved. The Government commissioned a study for accomplishing “a cross-government action plan developed”, to increase community engagement in solving public problems and improving people's quality of life.
- ❖ Defra developed toolkits and awareness raising materials in partnership with communication experts for better delivery of sustainable development through policies and services.
- ❖ Key links are provided as follow: [UK sustainable development strategy chapter on changing behaviour \(PDF 588KB\)](#) [Department for Education and Skills Sustainable Development Action plan](#) [Behaviour Change Research and Guidance](#)
- ❖ This would be of importance to follow on it for the sake of applying such best practices in different parts of the world, to alleviate suffering of food insecurity problems



the purpose here is
not only to raise awareness but also
to call for changing behavior





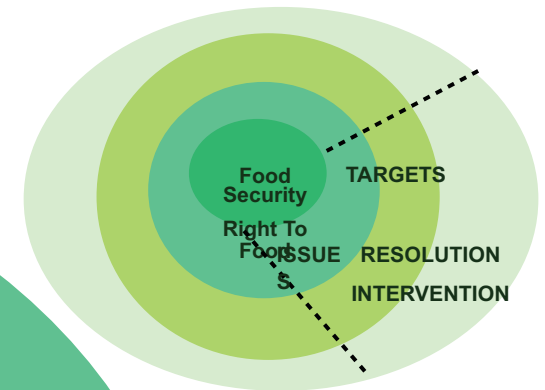
so, we need to change the model of thinking but what does this mean?

- **Mental model is the mind set behind all decisions or actions,**
- **it can represent the real obstacles, in problem solving, especially if these obstacles are structural, ingrained in the mind over long time.**
- **And in order to change behaviour, we need to change conviction. And this could be done through dialogue and good examples giving or best practices.**





Vision: Trends and Future directions



International Response

- MDGs Fell Short
- Water Management (IWRM)
- UNs Decade for SD (2005-2015)

Vision of 2030: Trends and Future Direction

4

- 4.1 Implementation of Millennium Development Goals, Uns Decade for SD
- 4.2 Vision/Challenges Matrix



Vision, Water and Food induced Conflicts: Vision - Challenges and Intervention

: Food Insecurity, Malnutrition, Hunger, and Poverty Environmental Challenges That are Threatening Arab Societies

- Greenhouse effect;
- Ozone layer destruction;
- Species diversity losses;
- Food insecurity;
- Water insecurity;
- Toxics: dispersion
- Human population explosion;
- Poverty. Hunger, Malnutrition

Intervention Tools/Policy Instruments

Strategies Policies Action Plan

Vision 2030: Sustainable Water and Food Security



The vision deployment matrix would be the way to monitor progress in realizing the vision .



Vision-Challenges Matrix



This creates tension, which could be creative in many instances.



All these Messages are directed to achieve the Announced MDG Goals As A Vision

Table 1: Millennium Development Goals*

To be achieved by 2015

- 1 Eradicate extreme poverty and hunger
- 2 Achieve universal primary education
- 3 Promote gender equality and empower women
- 4 Reduce child mortality
- 5 Improve maternal health
- 6 Combat HIV/AIDS, malaria, and other diseases
- 7 Ensure environmental sustainability
- 8 Develop a global partnership for development

*Within the framework of the 8 goals, there are 18 targets (and 48 indicators) to measure progress towards the Millennium Development Goals. Table 2 on page 5 highlights how improved water resources management and access to water supply and sanitation aids in achieving many of these targets.



MDGs: The Goal of eliminating Poverty

❖ Reviewing the implementation of United Nations's MDGs, there are 15 countries in Africa where the incidence of *hunger* exceeds 35% of the population. In South Asia 46% of young children are underweight; in India less food is available to rural households than in the 1950s. Sub Saharan Africa and South Asia are the regions most affected.

One third of child mortality is attributed to *malnutrition*. The second MDG indicator is therefore the proportion of children under five years who are underweight in relation to their age. This figure in developing countries has reduced only from 31% to 26% in the period 1990-2008, far short of the 2015 target of just over 10%.



G8 and donor community assistance for food security

- ❖ The 2009 G8 summit at L'Aquila in Italy unveiled the Agriculture and Food Security Initiative. The promise of \$20 billion spread over three years aims to support national action plans on hunger within a coherent global strategy for food security.
- ❖ The actual funding required to achieve the hunger-related MDG by 2015 has been estimated by development agencies at up to \$40 billion per annum. By comparison, western governments raised \$2,500 billion to rescue their ruined banks, according to the IMF.



G8 and donor community assistance for food security (continued)

❖ Development agencies point out that these MDG benchmarks for hunger place too much emphasis on quantity rather than quality of food. The absence of vital protein and micro-nutrients such as iron and iodine impairs the ability to learn and reduces resistance to disease, especially in young children.



the UNs decade for SD:

The UN decade of Education for Sustainable Development ESD 2005-2014 made ESD as a pressing and critical goal for the future of human kind.

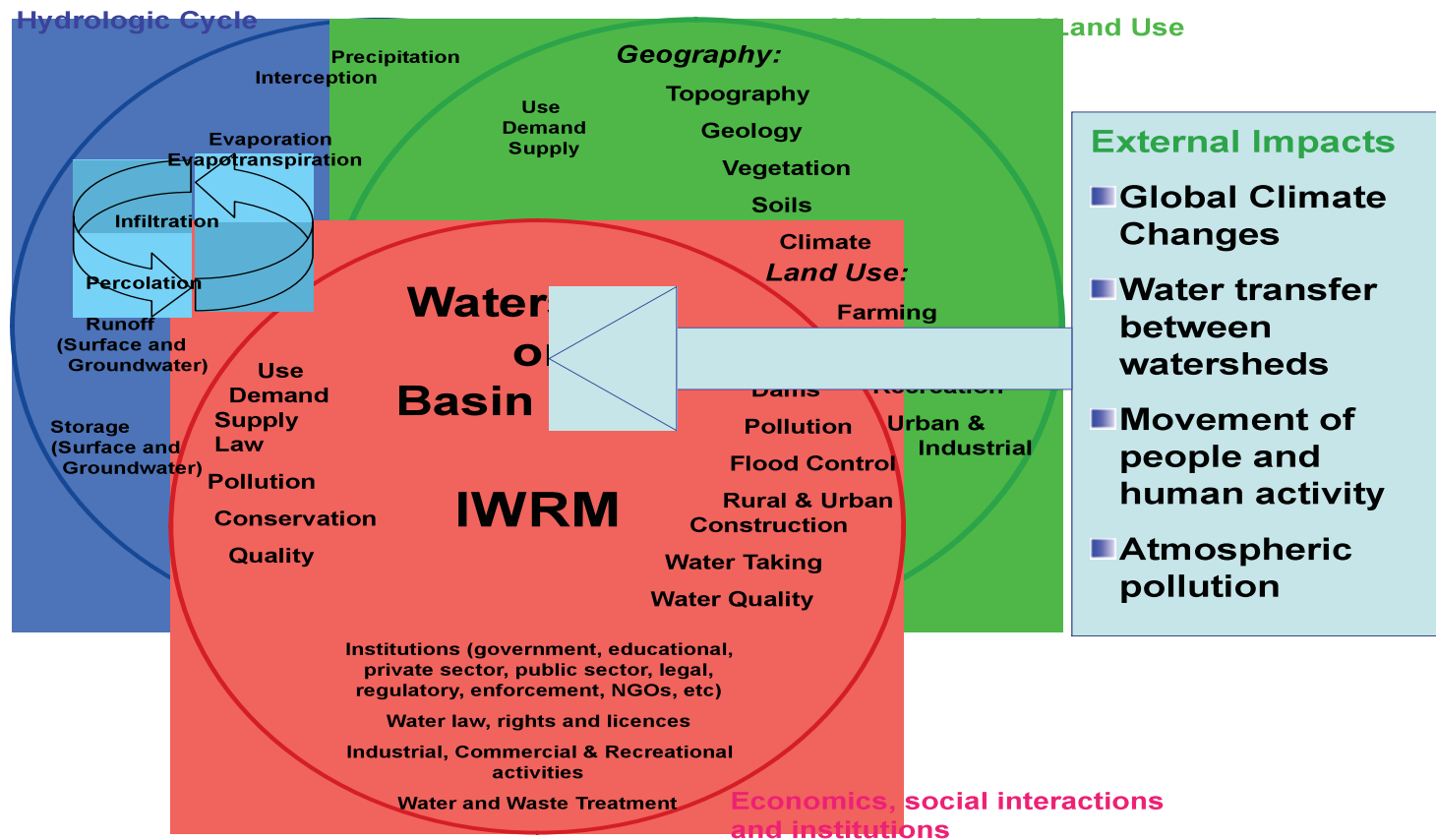
□ The focus in the decade is on key action themes:
quality education, environment, sustainable consumption, water, sustainable tourism, overcoming poverty, human rights, rural development, gender equality, health promotion, media and ITCs, intercultural and understanding, cultural diversity, indigenous knowledge.

□ Source: General Assembly of the United Nations, Resolution 57/254, December 2002.



Let us Apply IWRM

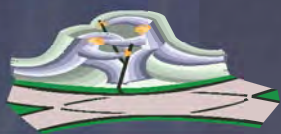
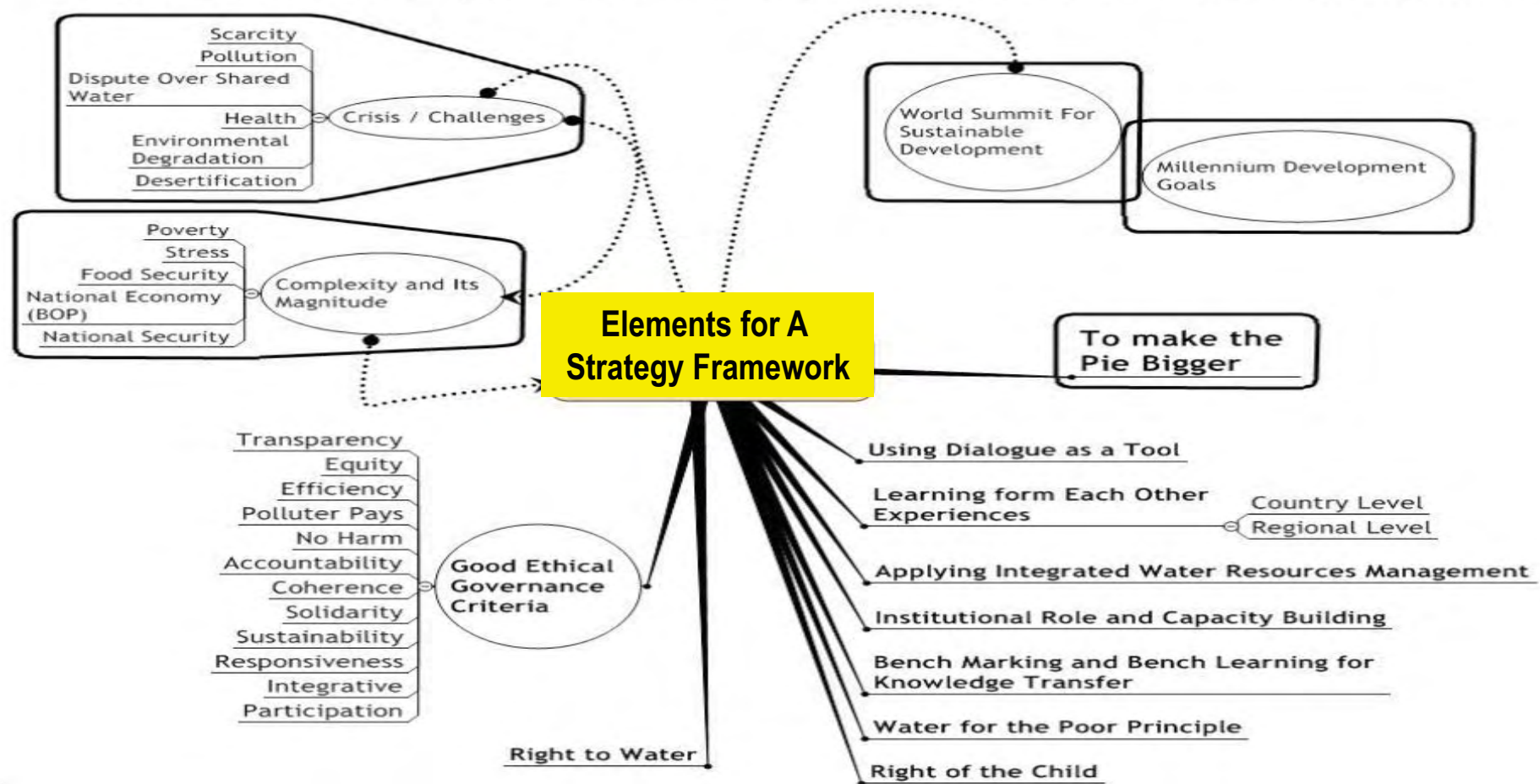
IWRM is pivotal in solving water and food problems



Components of Integrated Water Resource Management



towards building a water strategy that could impact on food security and ultimately eradicate poverty to be implemented within an Ethical and cultural framework



5

Concluding Remarks And The Way Ahead





CONCLUDING REMARKS:

- ✓ To follow a cultural and ethical approach,
- ✓ To have a design for an action plan for changing behavior in communities
- ✓ Botin Foundation could prepare for messages in view of our researches to be sent to WWF6, especially promoting the participatory approach to that end



Change of Behavior is pivotal in implementing the Strategy Framework to mitigate water and food conflicts and avoid crisis :

- ❑ It is our view that to make progress for mitigating water food induced conflicts, it is necessary to have *a focus* on some major activities in the cultural field, e.g., :
 - ✓ incorporating change of individual as well as societal behaviour, water ethics in educational curricula, formulating codes of conduct,
 - ✓ benchmarking and bench-learning of best ethical practices, and exchange experiences and knowledge
 - ✓ knowledge transfer through water and food education institutions(universities, research centres, and schools),
 - ✓ promoting public awareness, and using dialogue.



Conclusions: The Foregoing Analysis Suggests:

- Important enough is the soft path of impacting a change in behaviour and to follow a cultural approach , promoting learning and knowledge generation in dealing with the complexity problems of water-food induced conflicts,
- There is a need for A Water-Food Strategy Directions in the forthcoming World Water Forum 2012 in Marceille , that includes an “Ethical Framework to that Effect “.
- I would like to propose the establishment withing “Botin Water Observatory” A Working Group that could design such a Water and Food Strategy Directions in preparation of the 6th WWF.
- I would like with a sence of urgency to call for conducting more studies on the question of water-food induced conflicts, using case study approach and action research as a methodology
- In the meantime the RCWE could follow up on the implementation of such a proposal



the Need for more
Networking and Creating
Alliances



Quick Idea on The Regional Center for Research and Studies of Water Ethics (Situated in Cairo)

Structure & Method of Work





**THE END
THANK YOU**

