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WEFE Nexus apporach toward acheiving SDGs

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1st AYWP
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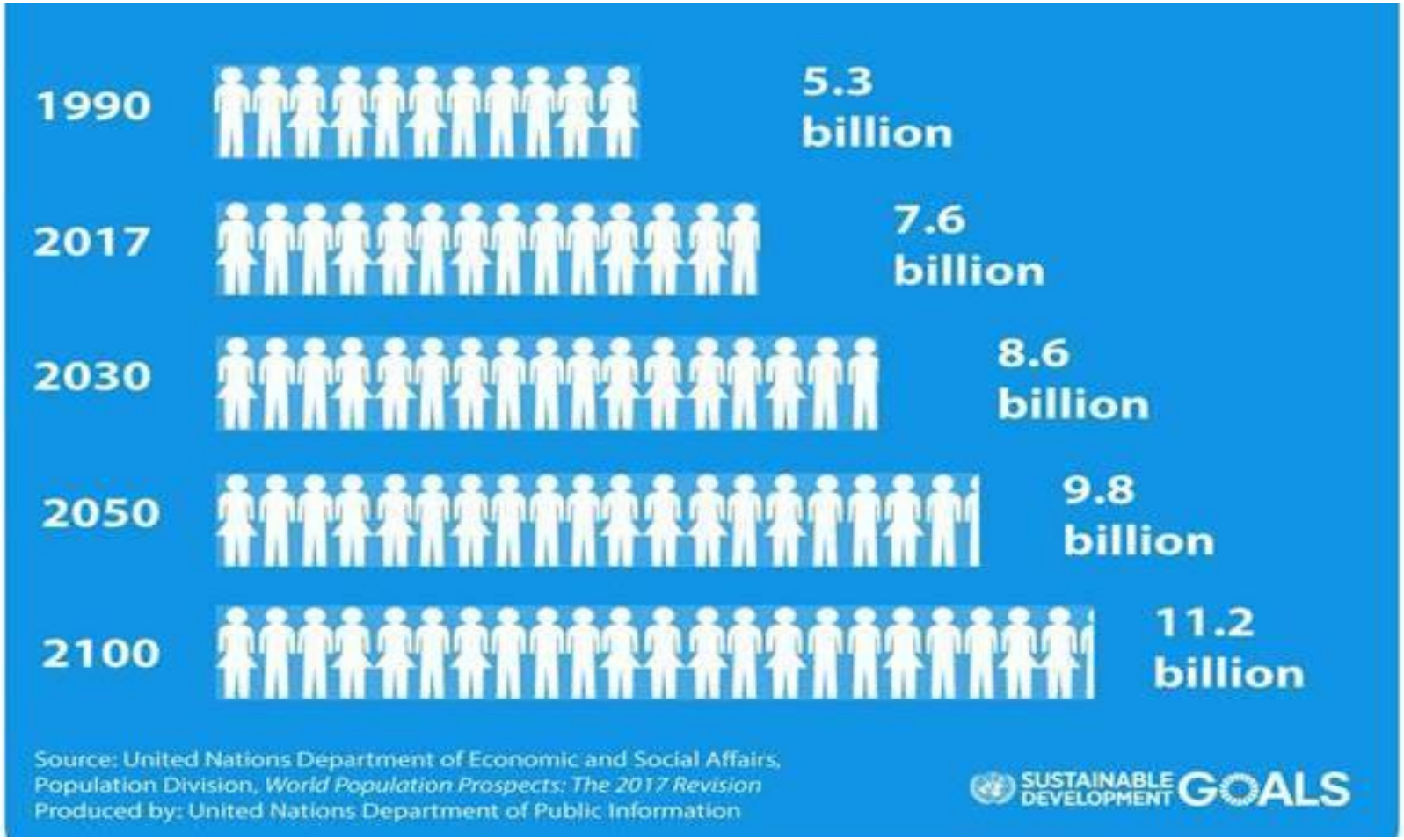
Outline :

- Why do we need Nexus thinking?
- What Nexus is about ?
- What are the Nexus Sectors interlinkages
- The relation between Nexus and SDGs
- What are the main challenges ?

What are the Nexus thinking Drivers



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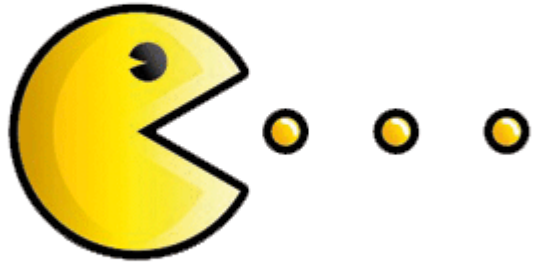
We Need food….



World agriculture has met the food needs of an increased population and expanded world economy during the last half of the 20th Century,

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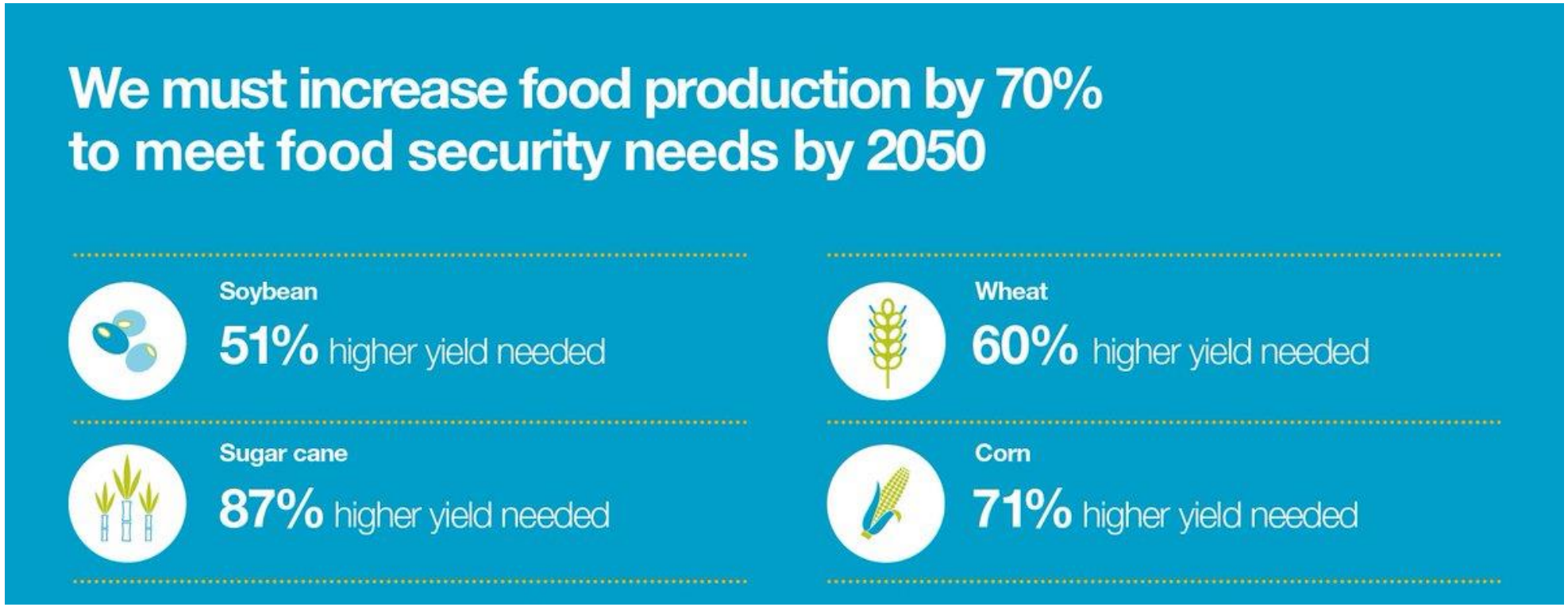
Agriculture's ability to meet the needs of an additional two billion people during the first half of the 21st Century is an open question.



But We Need Water, and We Need Energy….

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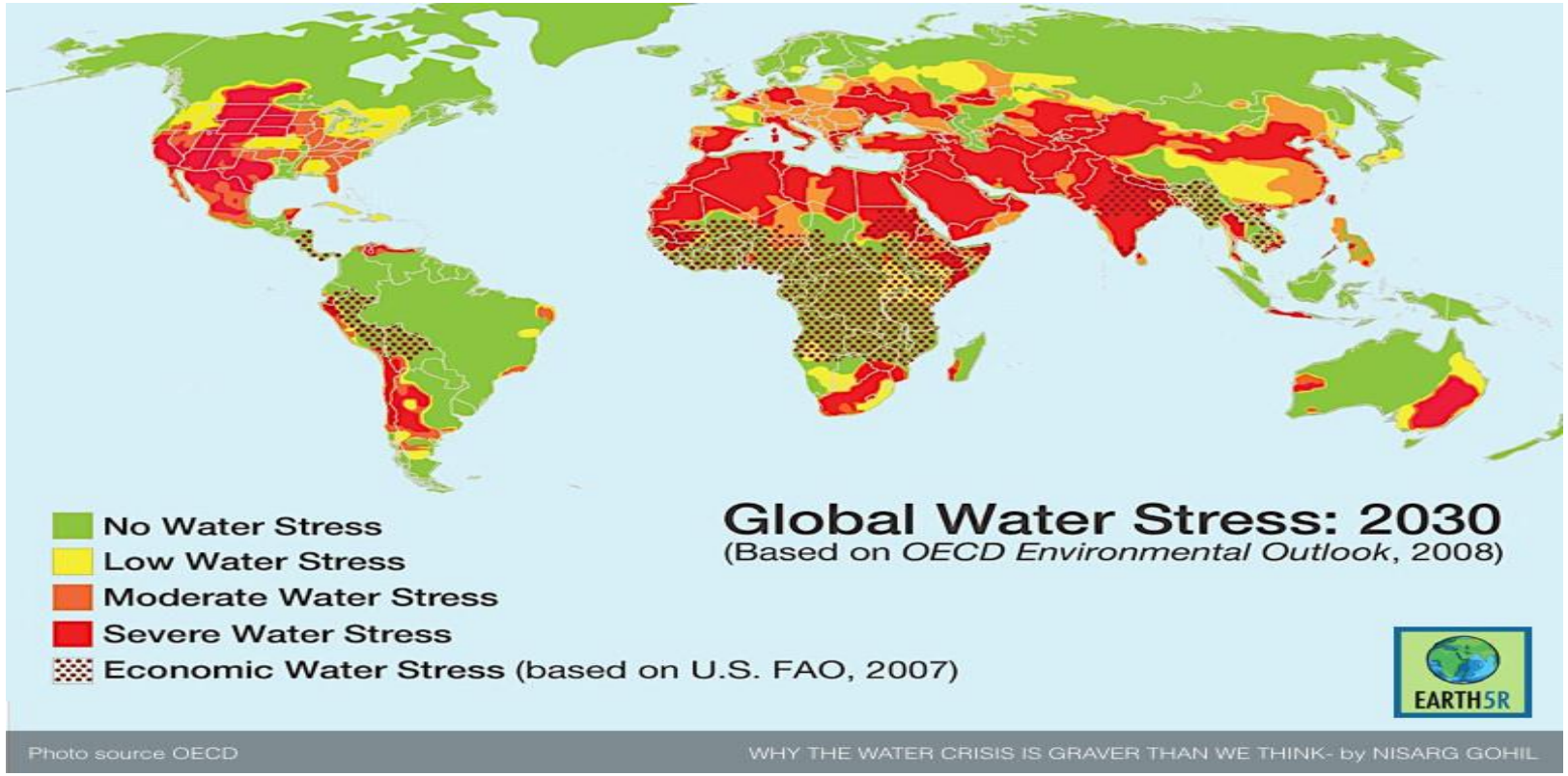
Agriculture accounts for 70% of global water withdrawal

In 2030, 47% of the world's population will be living in areas of high water stress



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- Food production and supply chain accounts for about 30% of total global energy consumption
- Roughly 75% of all industrial water withdrawals are used for energy production
- **Hydropower** provides 20% of the world's **electricity** and is the main **energy** source in more than 30 countries

- Water withdrawals for energy production could increase by 20% by 2035

Now 70% of water resource is used by Agriculture , to produce food….

By 2030 We need more water resources to produce more food….

We Need Energy to Produce Water

But producing Energy, overexploitation of WR, producing more food will negatively impact ecosystems

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The **Water,** **Energy** and **Food and Ecosystems** sectors **are so strongly interlinked** that actions in one area commonly impacts on one, tow or the three other sectors.

What is this Nexus Thinking

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Most governments/Countries have separate agencies to oversee water, energy, agricultural food production and Ecosystems.

They set policies and plan for each sector separately, each one in his corner

Governments' and international agencies' "silo" approaches to these resources have often led to unsustainable policy and development choices

Ecosystem

Agriculture

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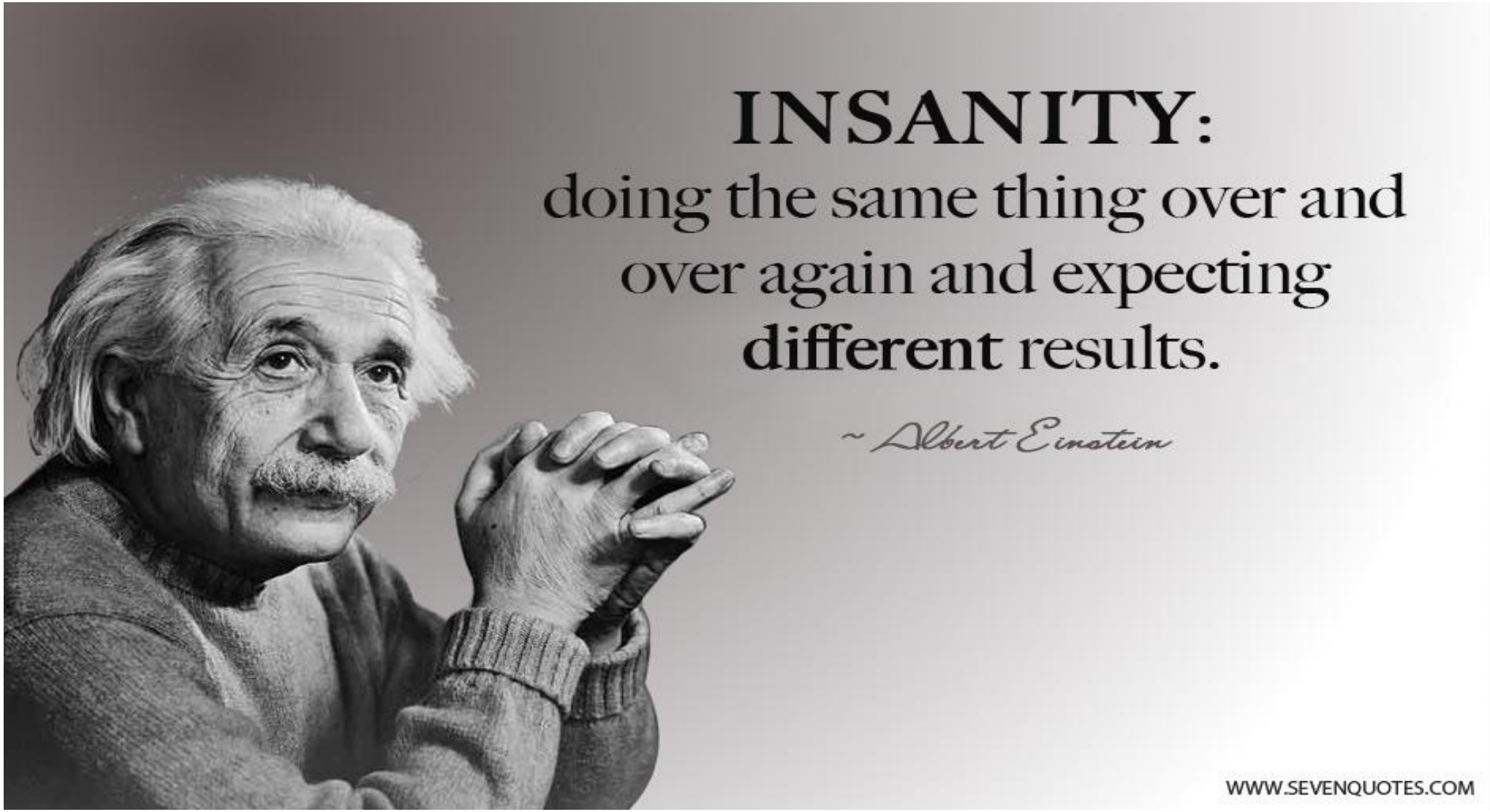
Water

Energy


INSANITY:
doing the same thing over and over again and expecting different results.
~ Albert Einstein
WWW.SEVENQUOTES.COM

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WEFE sectors are closely linked through local, regional, and global water, carbon, and energy cycles.

A growing number of scientists and policy analysts in recent years have emphasized linkages between water, energy, and food, and encouraged an integrated "nexus"

Bonn2011 has provided a first platform for consideration of the close interlinkages of water, energy and food security and the benefits of a nexus perspective in a multi-stakeholder process.

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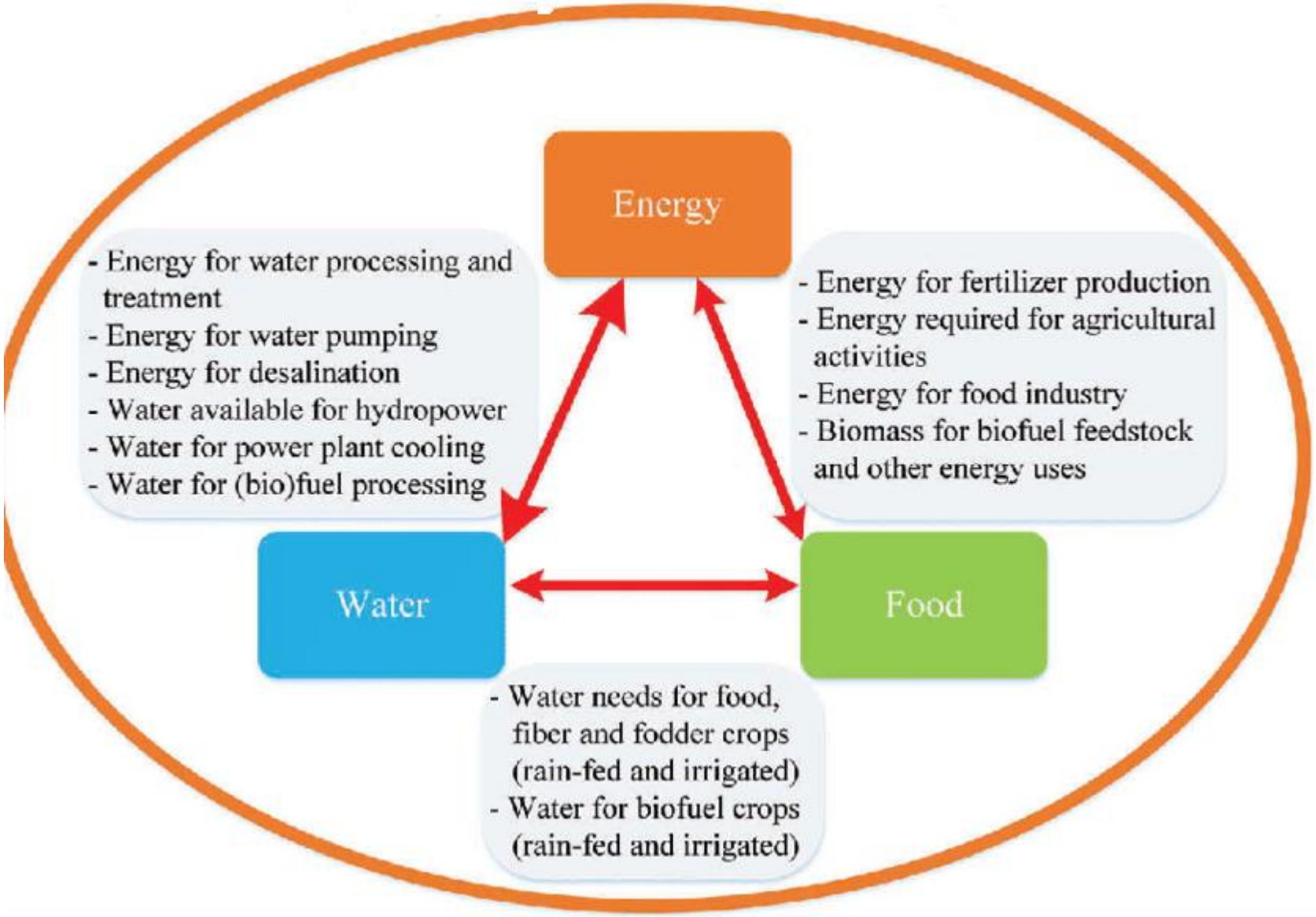
- A nexus perspective increases the understanding of the interdependencies across water, energy, food and other policies such as climate and biodiversity.
- The nexus perspective helps to move beyond silos and ivory towers that preclude interdisciplinary solutions. It opens the eyes for mutually beneficial responses and the potential of cooperation.
- We need to think and act interlinked to realize direct and indirect synergy potentials.
- Understanding the nexus is needed to develop policies, strategies and investments to exploit synergies and mitigate tradeoffs among these three development goals with active participation of and among government agencies, the private sector and civil society. In this way, unintended consequences can be avoided.

The WEFE Nexus Sectors interlinkages


Energy
- Energy for water processing and treatment
- Energy for water pumping
- Energy for desalination
- Water available for hydropower
- Water for power plant cooling
- Water for (bio)fuel processing
- Energy for fertilizer production
- Energy required for agricultural activities
- Energy for food industry
- Biomass for biofuel feedstock and other energy uses
Water
Food
- Water needs for food, fiber and fodder crops (rain-fed and irrigated)
- Water for biofuel crops (rain-fed and irrigated)

Some examples of Nexus interlinkages

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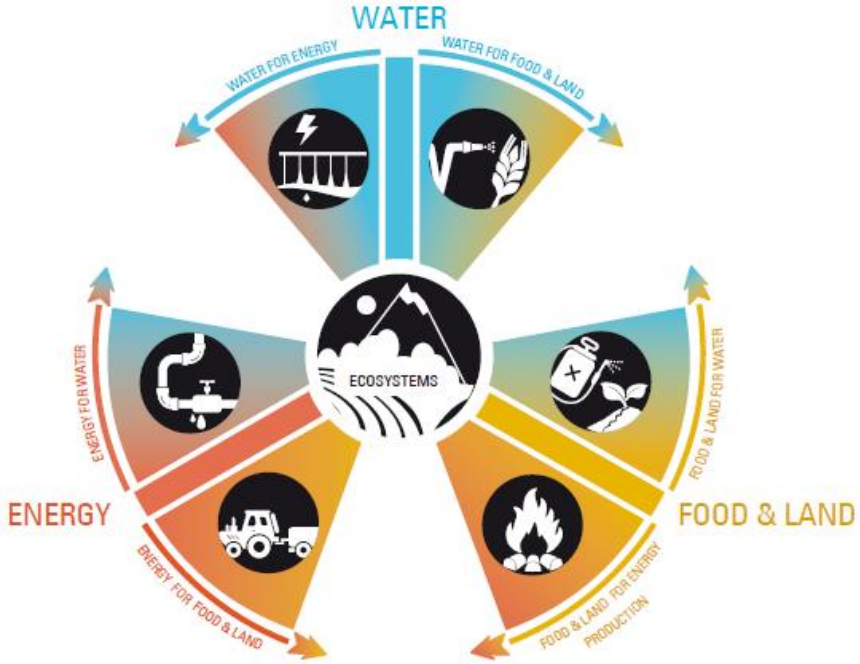
	Ecosystem services
Water	♦ Degradation of the biodiversity due to aquifer overexploitation
	♦ Expansion of irrigation (including new areas), water use inefficiency or poor drainage may result in groundwater table asphyxia
	♦ Water quality degrading, pollution may provoke health impacts

	Ecosystem services
Energy	♦ Pollutants and emissions form oil and gas industry and Electricity generation plants
	♦
	♦

Nexus is about interlinkages



UNECE, 2015

⇒ better understand inter-sector and inter-resources dynamics

⇒ Identify solutions allowing balance between different needs based on compromise and trade-offs negotiations

⇒ Exploit synergies across sectors

⇒ Make policies and actions more coherent across sectors

- End goal : sustainable and integrated management of natural resources

- IWRM can serve as the Nexus 'water path'

	Nexus (Water-Food-Energy-Ecosystems)
Origin of a wider political recognition of the concept	First Nexus Conference, Bonn, 2011
Trigger	Sectoral strategies and plans need more integration, and dynamic and dependent development scenarios to be considered.
Objective	Address externalities across sectors and achieve overall resource use efficiency.[b]
Entry point	Externalities between sectors; management of natural resources. The entry point can be different (e.g. water or energy) depending on the perspective of the policymaker and the priorities.[b] Seeks to engage different sectors in coordination on a more equal footing.
Main challenges	Defining actions, trade-offs and synergies in the provision of water, food and energy from resource to use, taking into account environmental needs. Harmonizing often diverging policy directions, targets and goals of different sectors.
Boundaries of a typical IWRM or nexus analysis	Depending on the focus, could be local, national, basin level, regional or global.[a]
Sectors and resources	There is no universal methodology. Depending on the focus of the analysis, water, energy or land use can be at the centre. However, outlooks for other sectors are dynamic, responding to the same drivers as well as to feedbacks between sectors.
International dimension	Explicitly reflected where resources or linkages between sectors are shared. This would include, for example, transboundary water bodies but also regional power pools, etc. Also, commodity prices are influenced by global markets.

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The WEFE Nexus and SDGs

Three years ago, The 2030 Agenda for Sustainable Development and the Sustainable Development Goals (SDGs) were adopted by the United Nations General Assembly

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Sustainable Development Goals (**SDGs**) (or **Global Goals for Sustainable Development**) are a collection of 17 global goals set by the United Nations General Assembly

There are 169 targets for the 17 goals. Each target has between 1 and 3 indicators used to measure progress toward reaching the targets. In total, **there are 304 indicators that will measure compliance**

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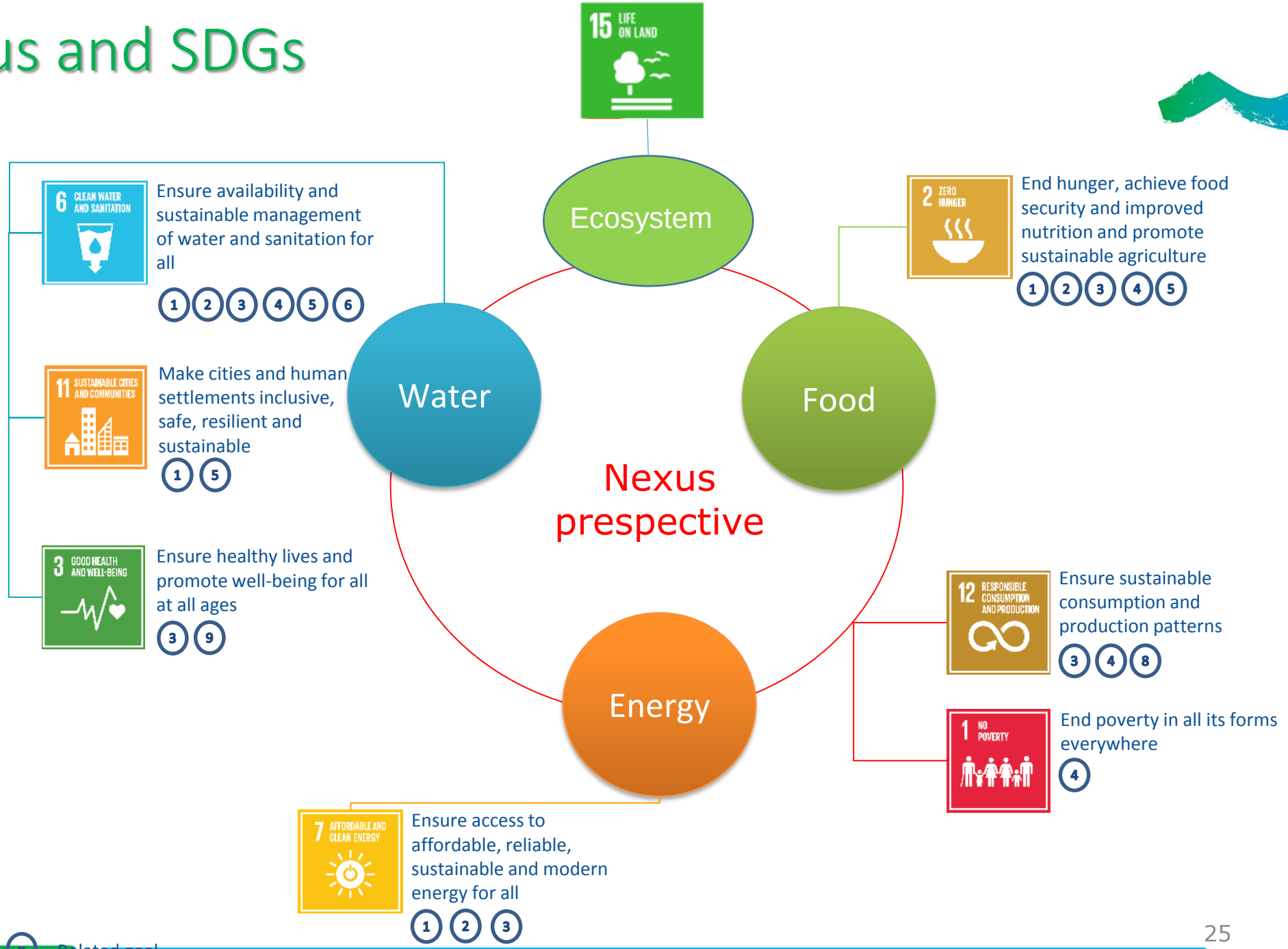
New integrated approaches and tools are needed to address the challenges posed by multiple and often conflicting human needs and demands, and to achieve the SDGs successfully by 2030.

The food–energy–water nexus approach can influence the achievement of all SDGs directly or indirectly by strengthening synergies, reducing trade-offs and creating cascading effects beyond food, energy and water sectors

Nexus and SDGs



(x) - Related goal

What is the added-value of a Nexus approach?

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- A cross-sectoral and dynamic perspective

- A Nexus approach helps us to better understand the complex and dynamic interrelationships between water, energy, food and Ecosystem , so that we can use and manage our limited resources sustainably.

- It forces us to think of the **impacts a decision in one sector can have not only on that sector, but on others**. Anticipating potential trade-offs and synergies, we can then design, appraise and prioritise response options that are viable across different sectors.

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A deep understanding of the nexus will provide the informed and transparent framework that is required to meet increasing global demands without compromising sustainability.

The nexus approach will also allow decision-makers to develop appropriate policies, strategies and investments, to explore and exploit synergies, and to identify and mitigate trade-offs among the development goals related to water, energy and food security. Active participation by and among government agencies, the private sector and civil society is critical to avoiding unintended adverse consequences.

Conclusions

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⇒ Nexus supports resource securities: water as the entry point

⇒ Achieve policy coherence towards sustainable development

⇒ Inclusive multi-stakeholders dialogues platforms

⇒ Co-optimized solutions (technology, nature based-solutions, …)

⇒ Innovative financial mechanisms (foster private sector participation,…)

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⇒ Intersectoral dialogue is required to address security concerns in the water-energy-food nexus;

⇒ While the need to consider water-energy-food-Ecosystem in the nexus is broadly acknowledged, the tools and expertise are not fully available to support political dialogue;

⇒ Integrated resource planning tools and analysis are required to address complexity.

⇒ Thinking in a water, energy and food security nexus perspective is central to the Green Industry and the consideration of SDGs.

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An overview about GWP-Med Nexus Projects

Advancing the Nexus Agenda in the region

Nexus Dialogue on the NWSAS : Algeria, Libya, Tunisia

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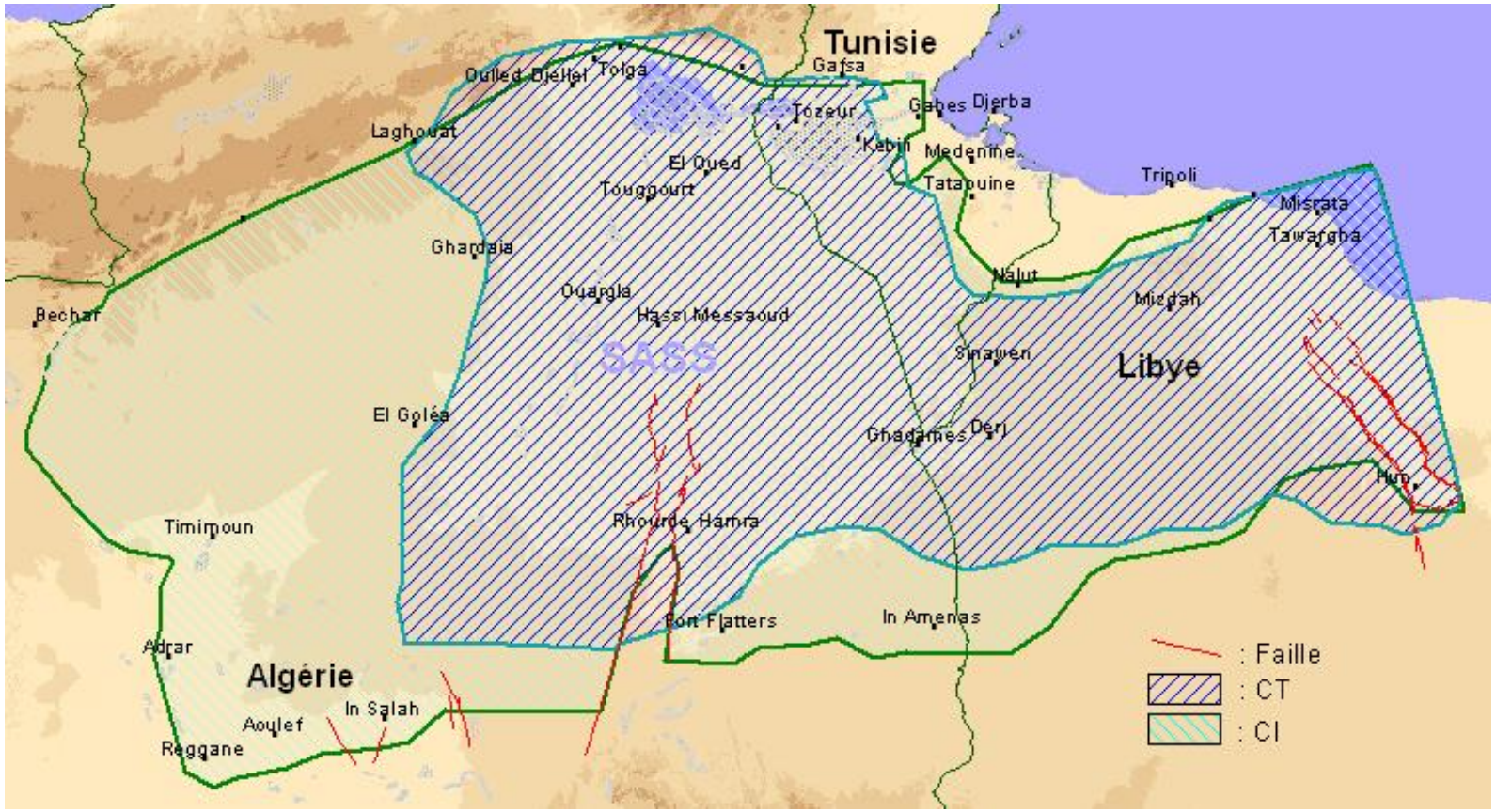
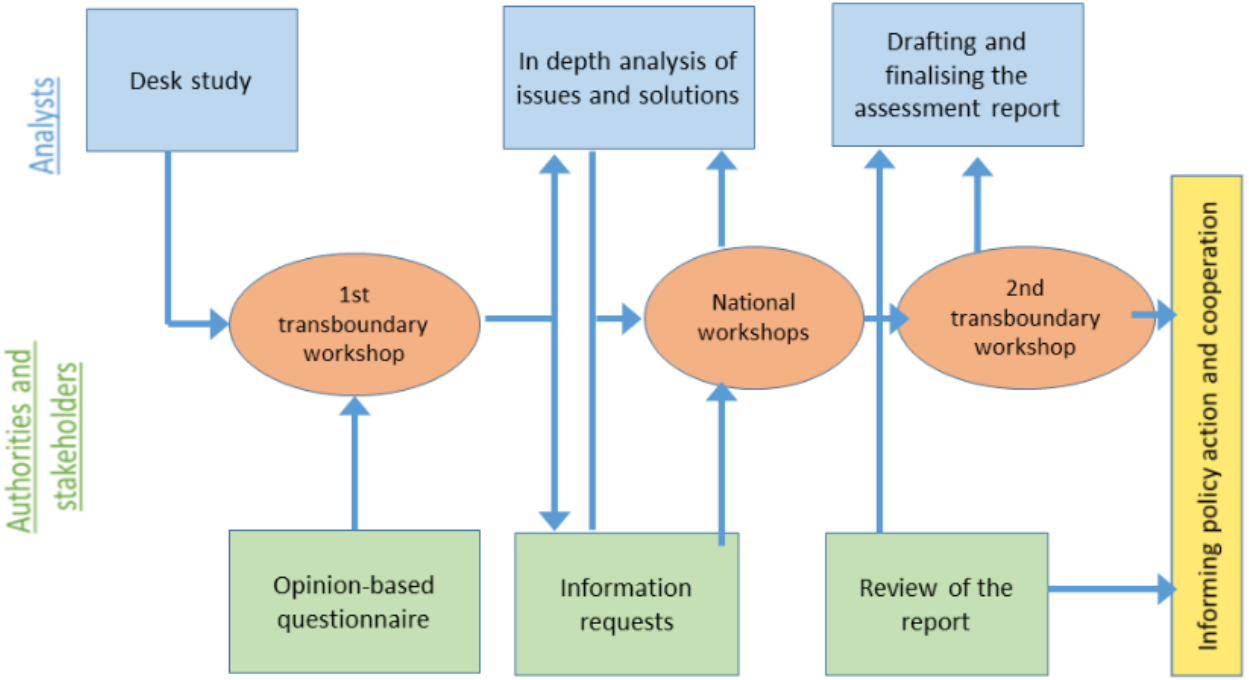
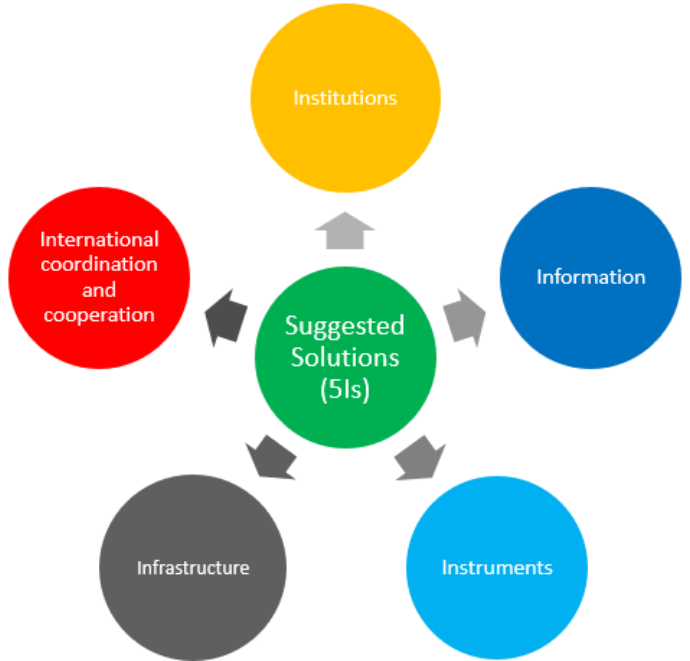
- Partners : GWP-Med, UNECE and OSS
- SIDA support in synergy with WACDEP





	Water	Energy	Land/Agriculture	Ecosystem services
Water		*Energy (ENE) to Water (WAT) 1 * ENE to WAT 2 Etc.	* Land/Agriculture (AGR) to WAT 1 * AGR to WAT 2 Etc.	*Ecosystem (ECO) to WAT 1 Etc.
Energy	*WAT to ENE 1 * WAT to ENE 2 Etc.		* AGR to ENE 1 Etc.	*ECO to ENE 1 Etc.
Land/Agriculture	*WAT to AGR 1 * WAT to AGR 2 .	*ENE to AGR 1 * ENE to AGR 2		*ECO to AGR 1 * ECO to AGR 2
Ecosystem services	*WAT to ECO 1 * WAT to ECO 2	* ENE to ECO 1 Etc.	* AGR to ECO 1 * AGR to ECO 2 Etc.	



Capacity Building Platform on Water Management and Abstraction

- **Partners : WI, GWP-Med ,IUCN Med, IUCN ROWA, MedWet, Tour du Valat, WWF-NA**
- **MAVA Foundation support**

Aims to promote sustainable water use by bringing wetland needs and their contributions to society into dialogues around water allocation and management, through :

- Knowledge platform development with focus on IWRM and IRBM implementation mobilizing Nexus
- Empowering CSOs to influence the policy, planning related to water investments and to engage with private sector
- Enabling water basin agencies and governmental bodies to fully integrate an ecosystems approach and WEFE Nexus in planning

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Nexus Challenges

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⇒ Lack of political willgness to have Nexus dialogues

⇒ Demanding stakeholders dialogues (high number of stakeholders)

⇒ Limited knowledge of stakeholders : unpredictable reaction to the dialogues

⇒ Convening power and leadership for the decision making

Nexus challenges

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Which technologies?

What governance arrangements?

Whose risks and benefits at which scales?

How can investment pathways work across sectors?

Which sectors are most powerful?

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Thank you for your attention

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