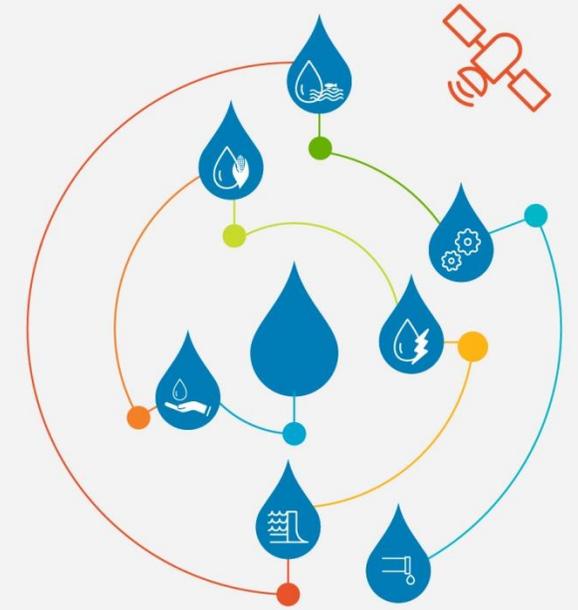


Climate-Smart Irrigation



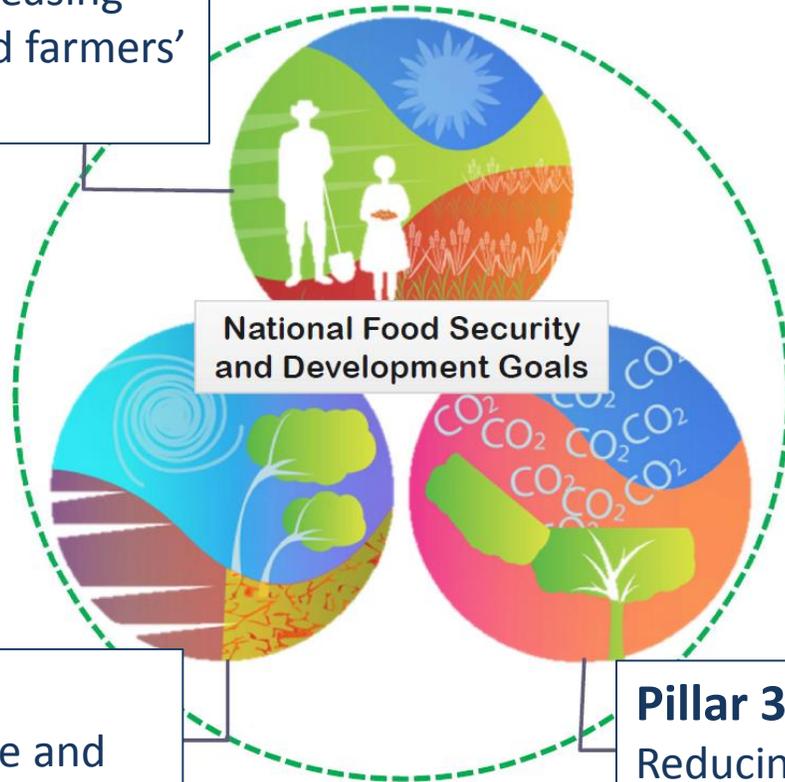
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Food and Agriculture Organization of the
United Nations
3 October 2018

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Climate-Smart Irrigation (CSI)

Pillar 1

Sustainably increasing productivity and farmers' incomes



National Food Security and Development Goals

Pillar 2

Building resilience and adaptation to climate change

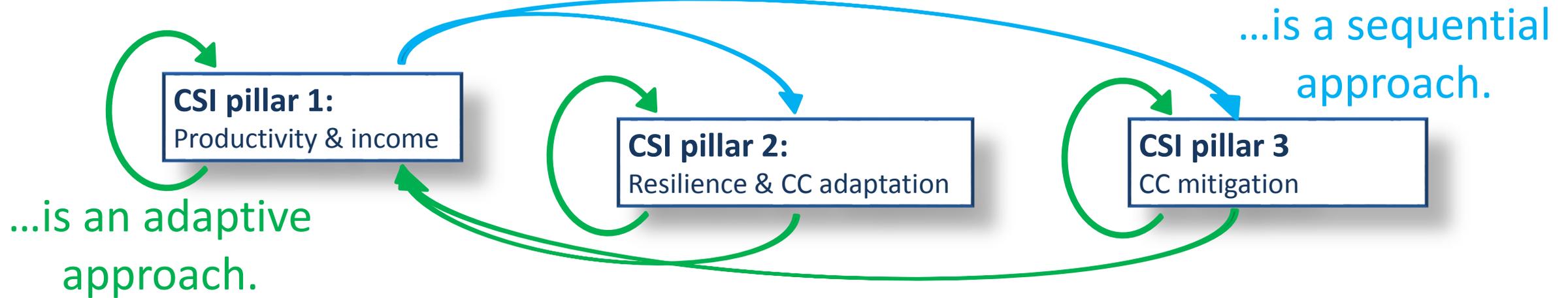
Pillar 3

Reducing and/or removing greenhouse gas emissions, where possible

- Climate-Smart Irrigation (CSI) is a concept based on the 3 pillars of Climate-Smart Agriculture (CSA).
- CSI helps to address the intertwined challenges of sustainable water use, water scarcity and climate change in the irrigation sector.



CSI approach



Builds on **good irrigation practice** to create:

- Identifies additional location-specific **adaptation options** to:

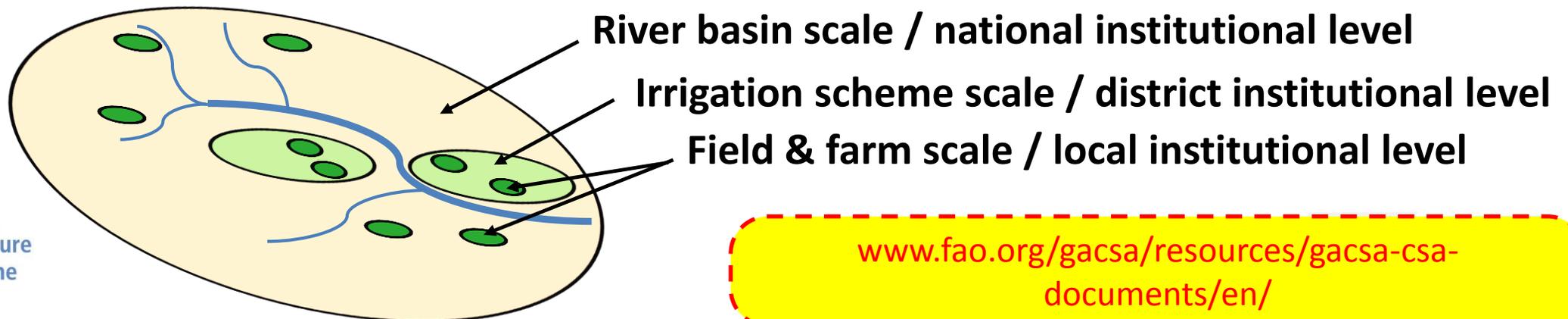
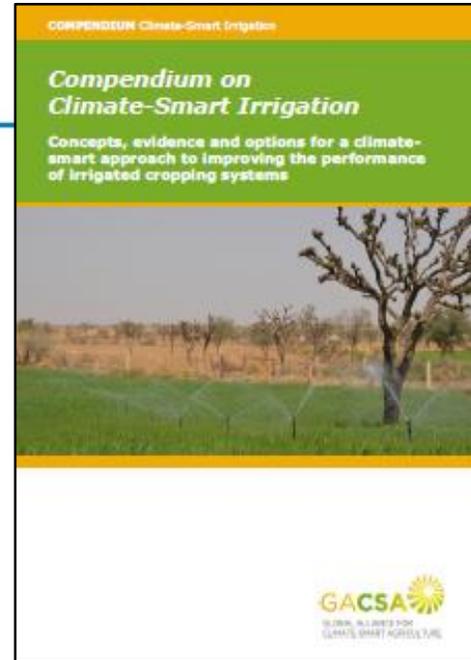
- Identifies additional location-specific **mitigation options** to:

- Makes **incremental improvements** to irrigation hardware and software as and when new information or evidence becomes available for evidence-based decisions.



Compendium on CSI

- Presents/provides guidance on identification of relevant issues, methods, approaches, and required assessments, for irrigation development in due consideration of climate change.
- Serves as information resource for actors at different levels, who seek specific information or suggestions for improvements in irrigated agriculture related to either of the three CSI objectives.



Food and Agriculture
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United Nations

www.fao.org/gacsa/resources/gacsa-csa-documents/en/

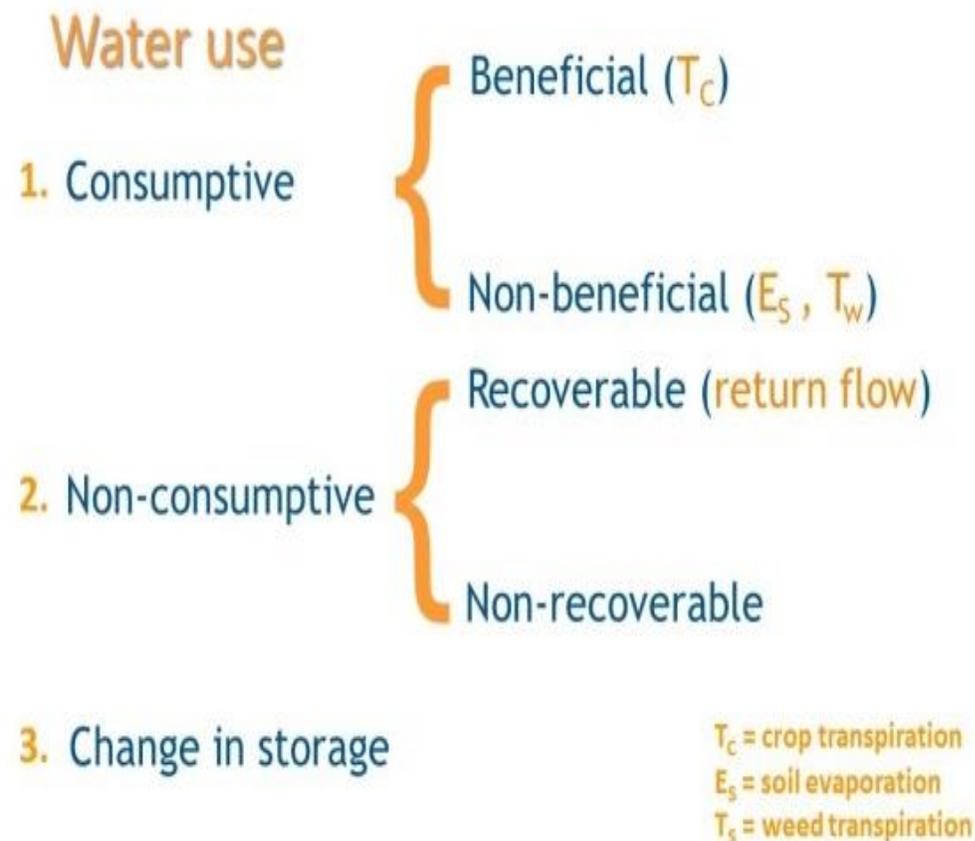
Example: Irrigation method

- The CSI Compendium compares the advantages and limitations of different irrigation methods and technologies related to the 3 CSI pillars to help identify the appropriate method for given location-specific context. Aspects include:
 - Cost
 - Application efficiency
 - Adaptability to variations in climate conditions
 - Energy requirements
 - Etc.

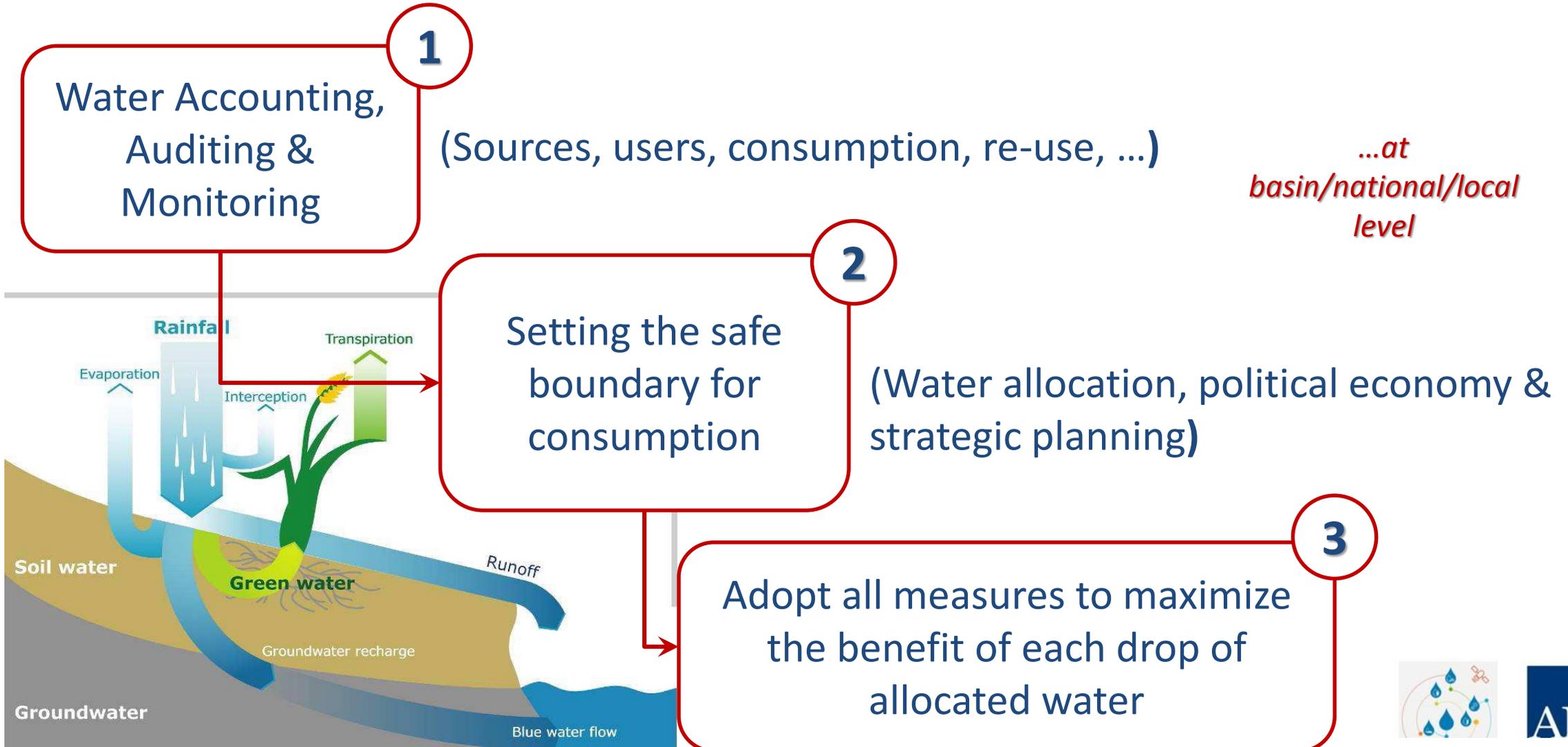


Example: Water accounting

- Water accounting is critical in the context of CSI in terms of:
 - Achieving sustainable use of water resources, including by ecosystems
 - Assessing third party impacts by irrigation activities (e.g. downstream)
 - Planning for transparent allocation of scarce water resources for climate change adaptation



Example: Sequencing



(Modernization, crop shifts, new seeds, markets)

Example: Assessment of GHG emissions

- The CSI Compendium discusses greenhouse gas (GHG) emissions from irrigated production systems and mitigation options from the field to value-chain level and proposes an approach that focuses mitigation strategies and measures on:
 - Identifying and quantifying the main sources or causes of GHG emissions
 - Prioritizing sources or causes of GHG emissions according to (i) magnitude; (ii) availability of mitigation options; (iii) potential synergies or trade-offs
 - Taking advantage of possible offsetting opportunities at a higher scale



Enabling conditions for CSI

- Effective **dialogue** between stakeholders (horizontal & vertical) for inclusive decision making
- Strong **evidence base** for informed decision making (e.g. water accounting, GHG emission assessments)
- **Commitment over longer periods of time**, complemented by continued monitoring and evaluation, to allow for an adaptive approach
- **Capacitation** of farmers and information service providers to use new irrigation and information technologies appropriately

Conclusions

- The consideration of climate change adaptation and mitigation in the irrigation sector is essential to build production systems that are productive, profitable and sustainable in the long term.
- Climate-Smart Irrigation represents a suitable framework to integrate such considerations.
- The FAO Compendium on Climate-Smart Irrigation provides a comprehensive overview of information, concepts, planning tools, technologies and practices related to the development of context-specific climate-smart irrigation solutions.