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Water Resources Management

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Integrated Water Resources Management Improvement of basin functionalities Case Study Mono River Basin Togo/Benin

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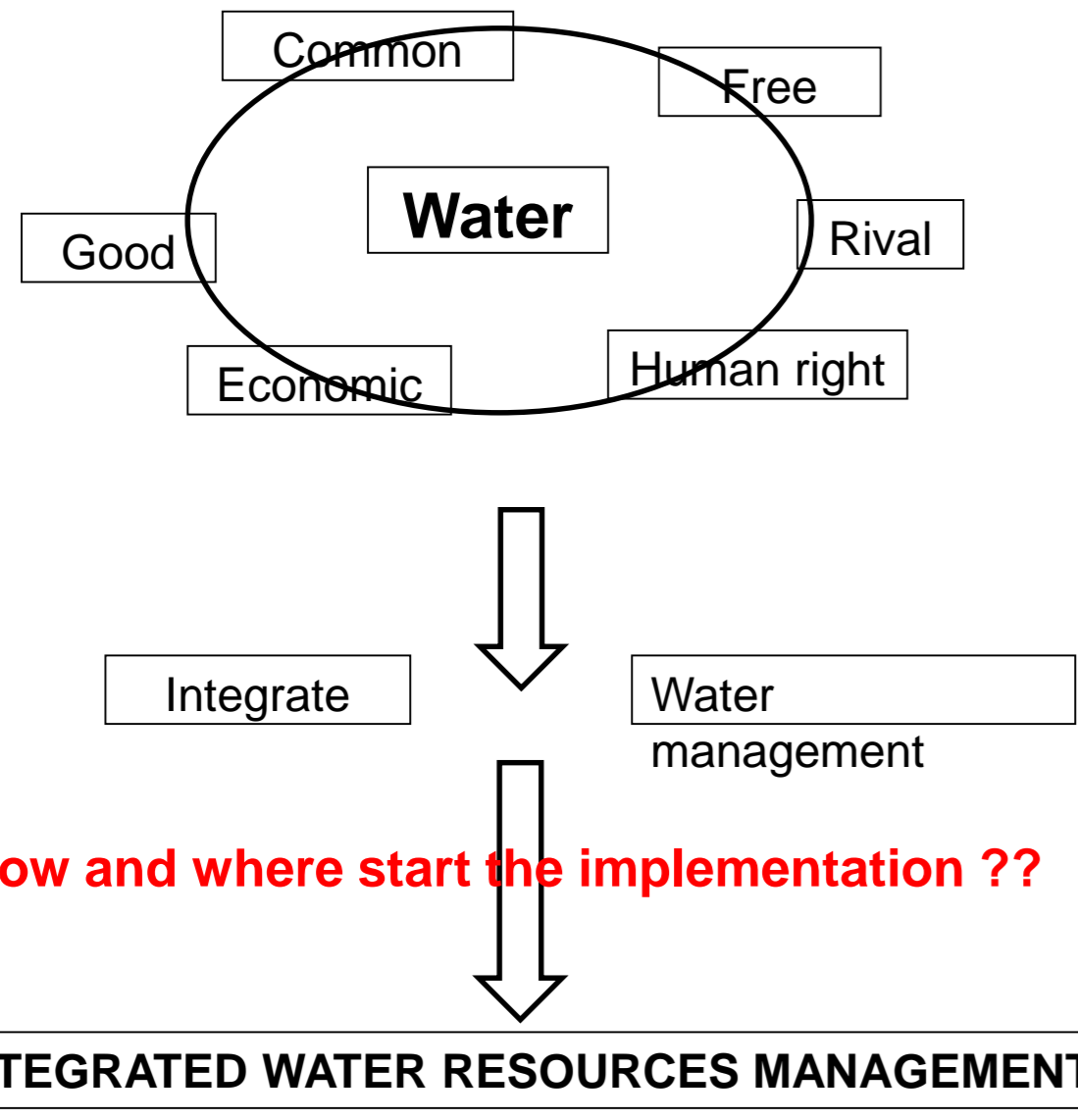
Thesis started in : 2016/2017

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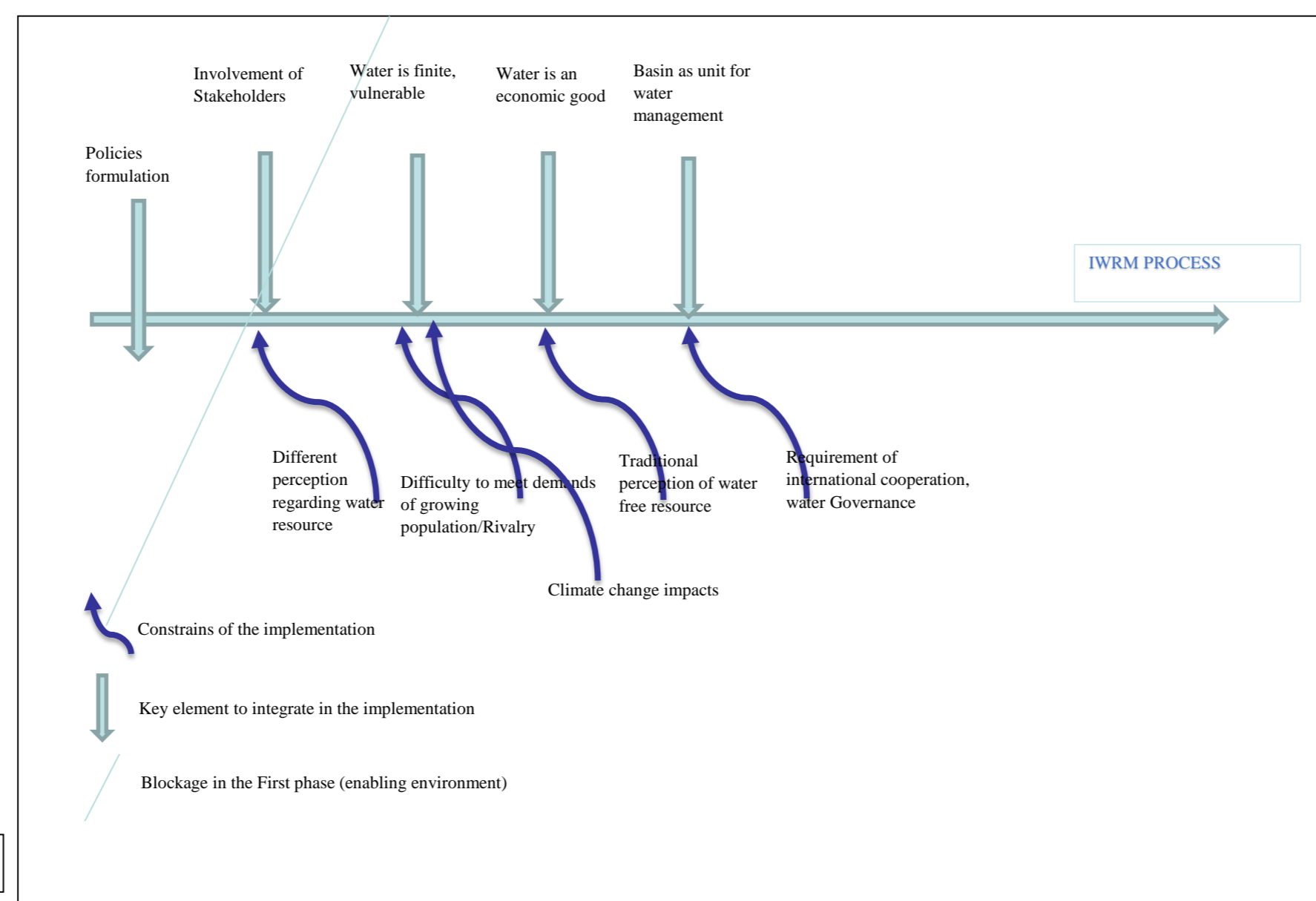
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Problematique

- What are the different perceptions regarding water ?
- How water resources can be defined ?



- The Implementation of Integrated water resources management is not satisfactorily progressing. What are the challenges of the implementation of this concept in Africa ?



- African countries still struggling to meet drinking water supply and sanitation needs.

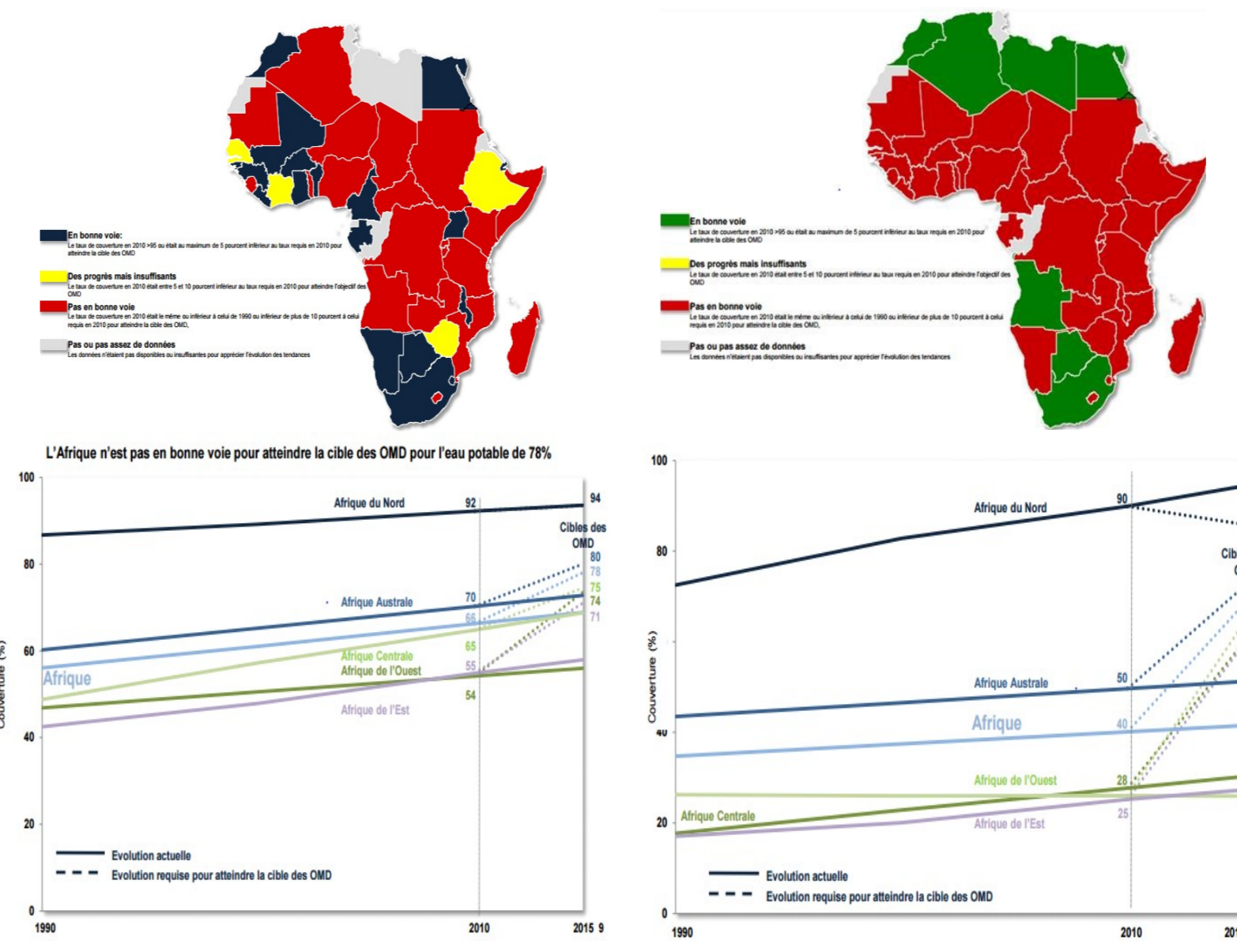


Fig. 1: MDG for 2015 Drinking water supply and sanitation in Africa

Résumé

This research addresses the water resource issue as an economic, common and rival good using the holistic approach that manifests itself under the concept of "integrated management". The basin, which represents the optimal unit of water resource management, often goes beyond the administrative boundaries, creating conflicts at different scales. In Africa, transboundary basins account for more than 90% of the surface area of water resources, which increases the risk of conflicts over water use. The Mono River basin shared between Togo and Benin is a good case study to construct a systemic analysis to define the various stakeholders of the water resources system and their interactions. This research will allow us, through field investigations to focus later on the problem of drinking water supply and agriculture in this basin. Finally, this work highlights the contribution of integrated management to the improvement of basin functionalities.

Mots-clés : water, perception, integrated management, governance, drinking water supply, sanitation

Case Study : Mono River Basin Togo-Benin

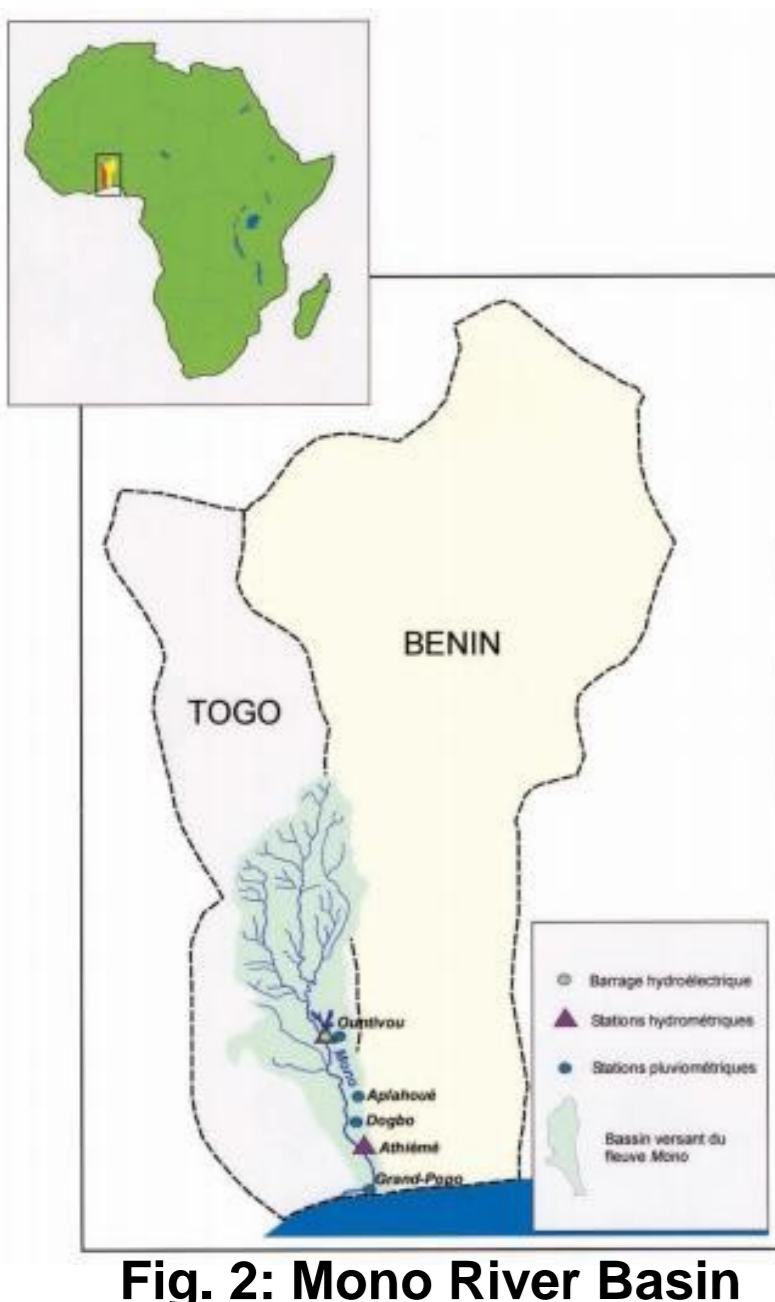


Fig. 2: Mono River Basin

- Transboundary basin shared between Togo and Benin
- The total renewable water resources in Togo and Benin is between 1700-5000 cubic meter per capita per year (WWDR, 2016)
- Lack of water resources monitoring of its quantitative and qualitative evolution and very low rate of equipment in sewage systems and no wastewater treatment.
- Limited infrastructure investment in DWSS sector which causes water pollution and transmission of water born diseases.
- Inefficient planning of the existing water resources and fragmented use. Agriculture has a big importance in the basin but still based on traditional farming system using traditional tools and non sustainable irrigation.
- Absence of international policy for sustainable management of the transboundary basin.
- Lack of population's awareness and very low sustainable water use education.



Fig. 3: Drinking water supply and sanitation in Togo and Benin. JMP 2015



Fig. 4: water related issues in the Mono Basin Togo-Benin. (Exploratory Field trip pictures)

Research Methodology

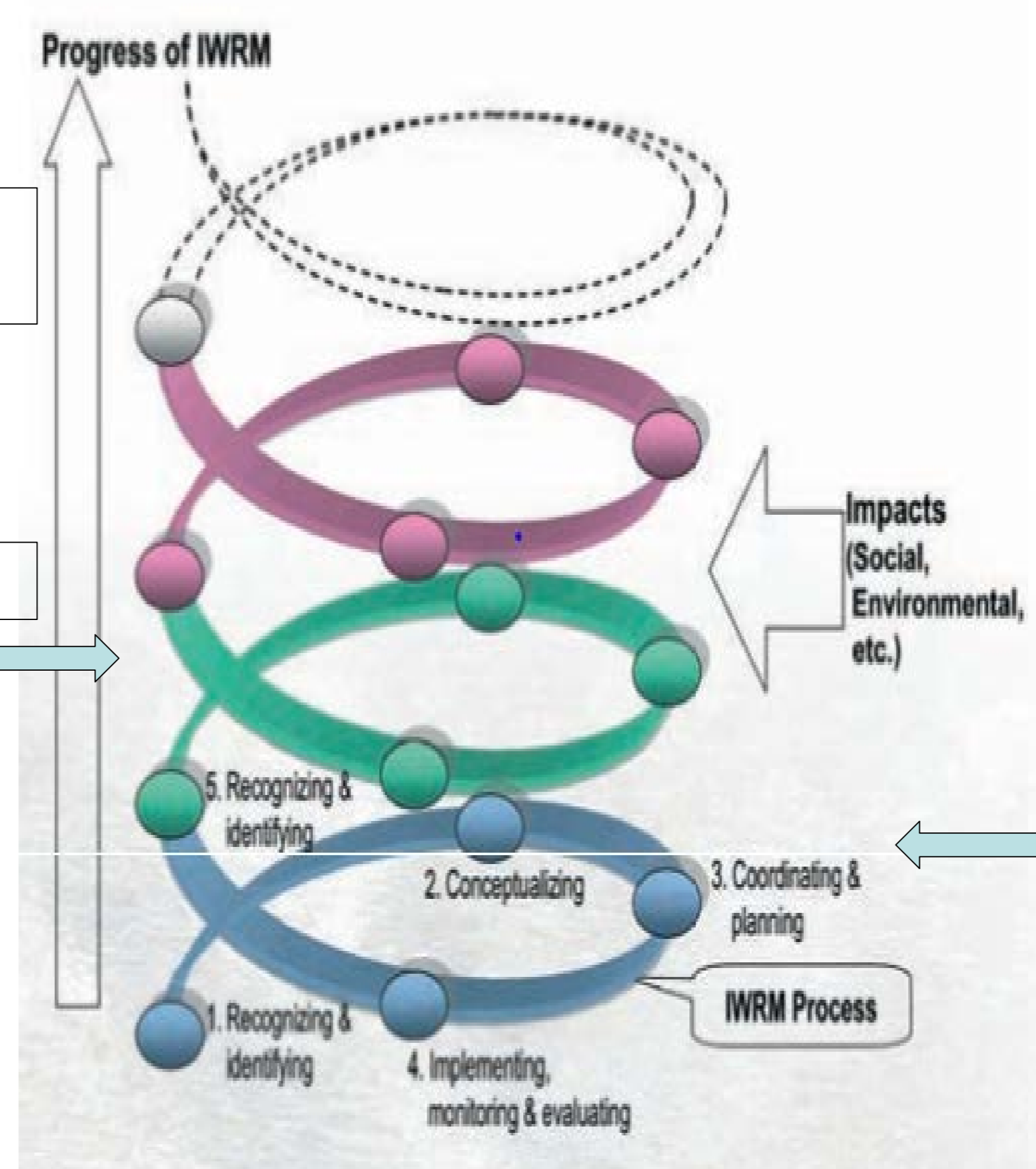
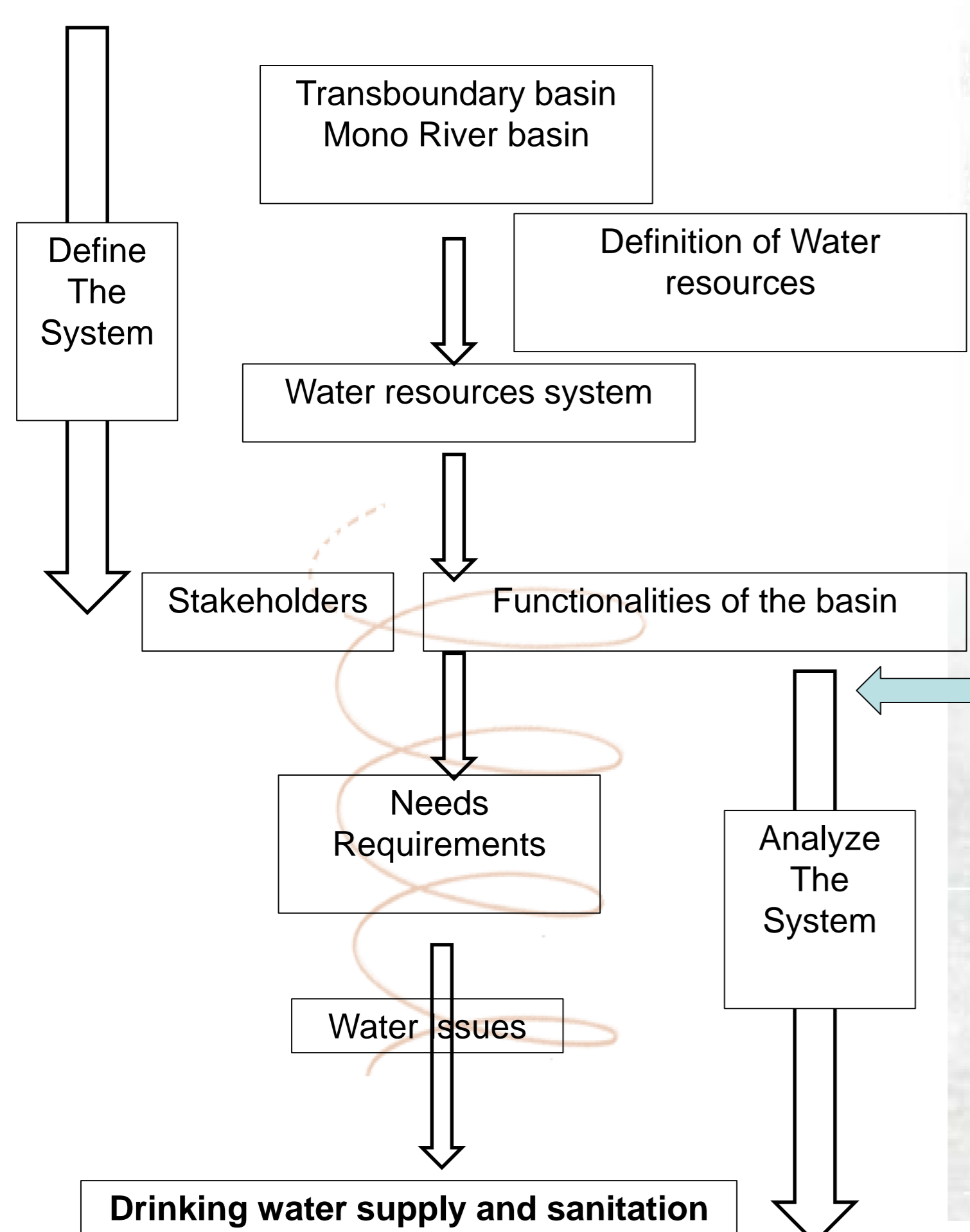


Fig. 5: IWRM process spiral model

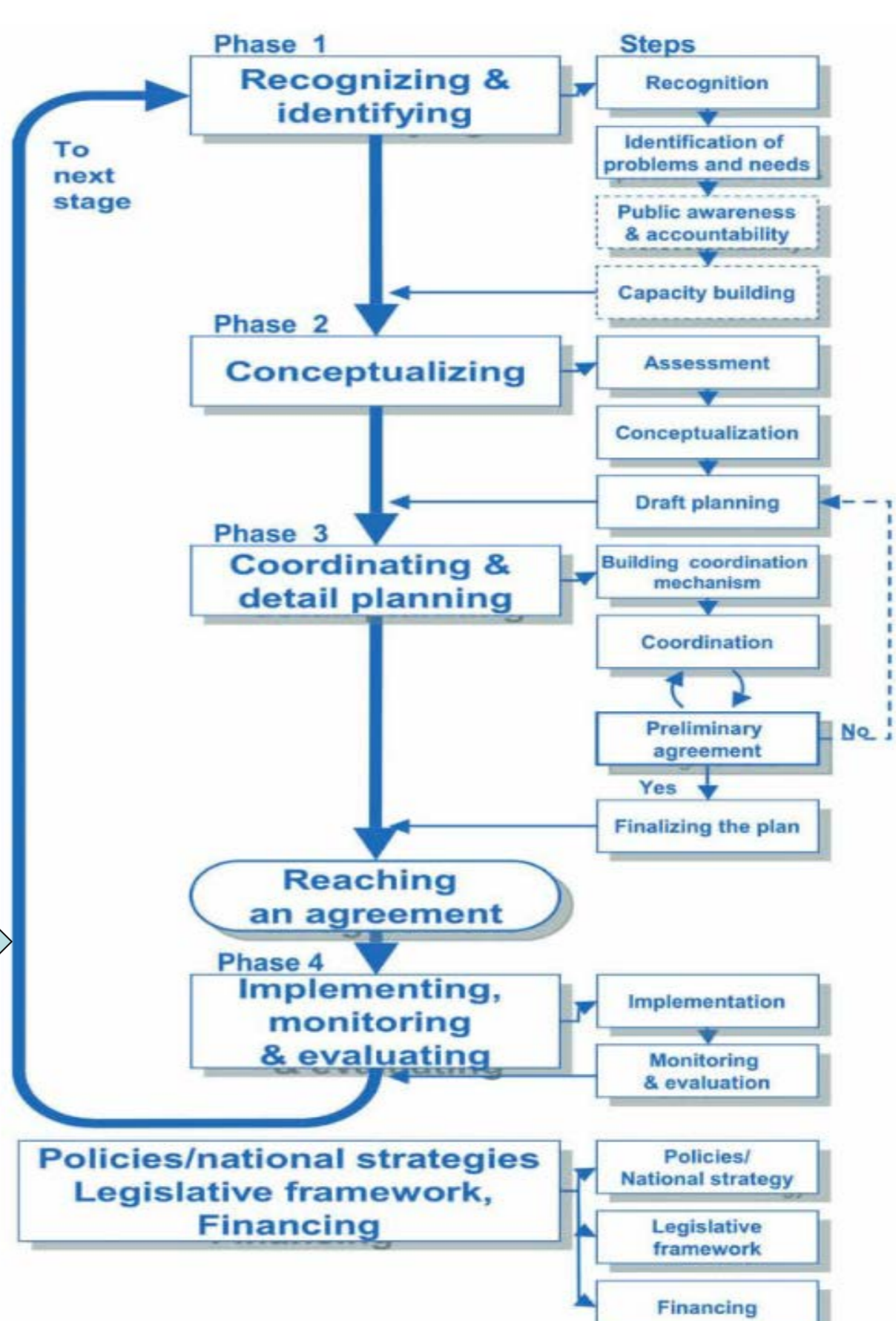


Fig. 6: guidelines of IWRM implementation

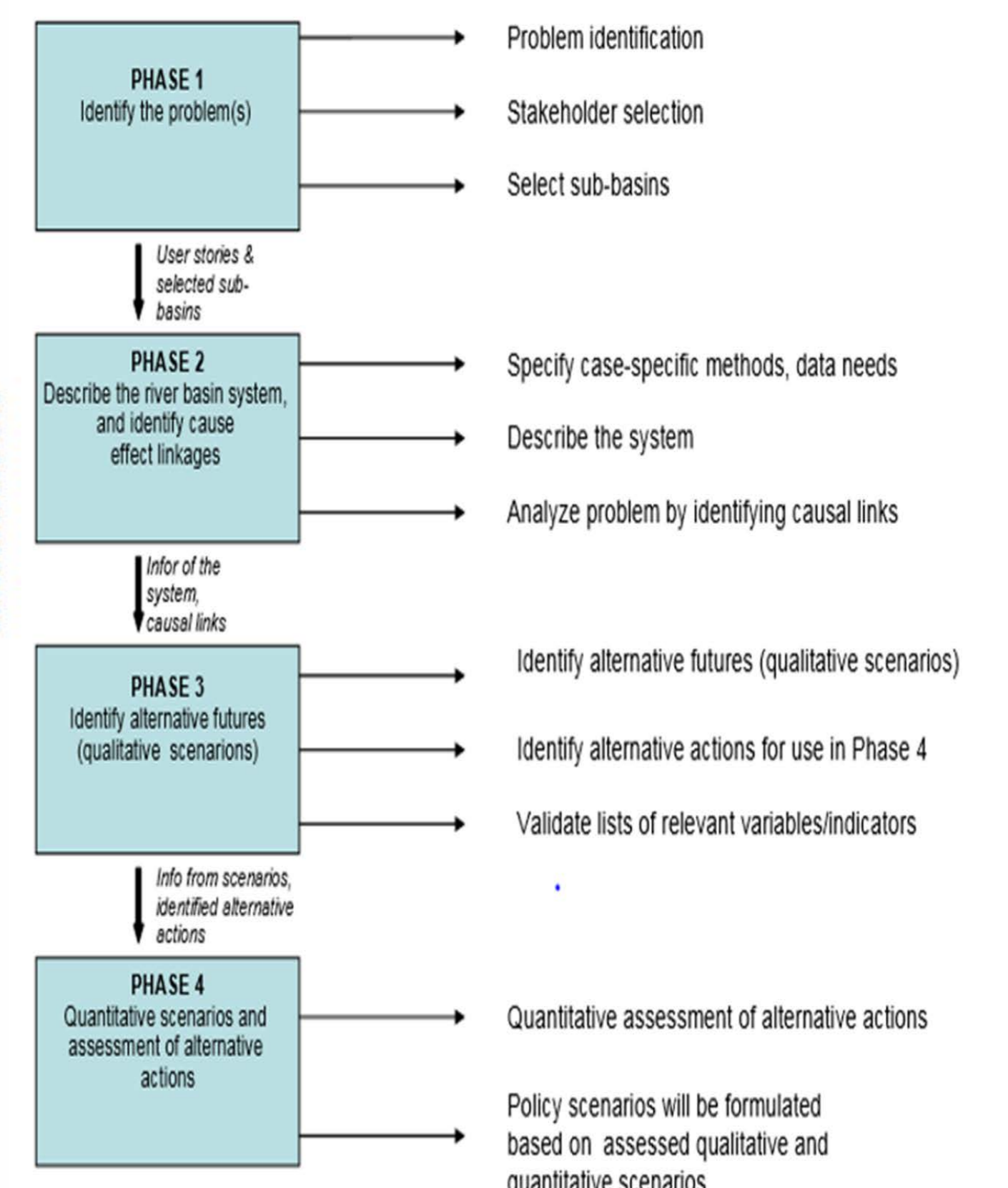


Fig. 7: STRIVER framework

Objective

- Study the perceptions of the different sectors regarding the water resources.
- Study the concept of IWRM
- Identify water resources system in Mono river basin.
- Systematic analysis of the IWRM implementation process.
- Examine drinking water supply and sanitation issues in the Mono river basin.
- Address water management issues in the basin and improve basin functionalities.

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