

**Naeem Khan**

Ex-Secretary, Government of  
KP

April 2019

# Integrated Water Resource Management Strategy KP

**Strategic priorities and  
actions**

## **Goal**

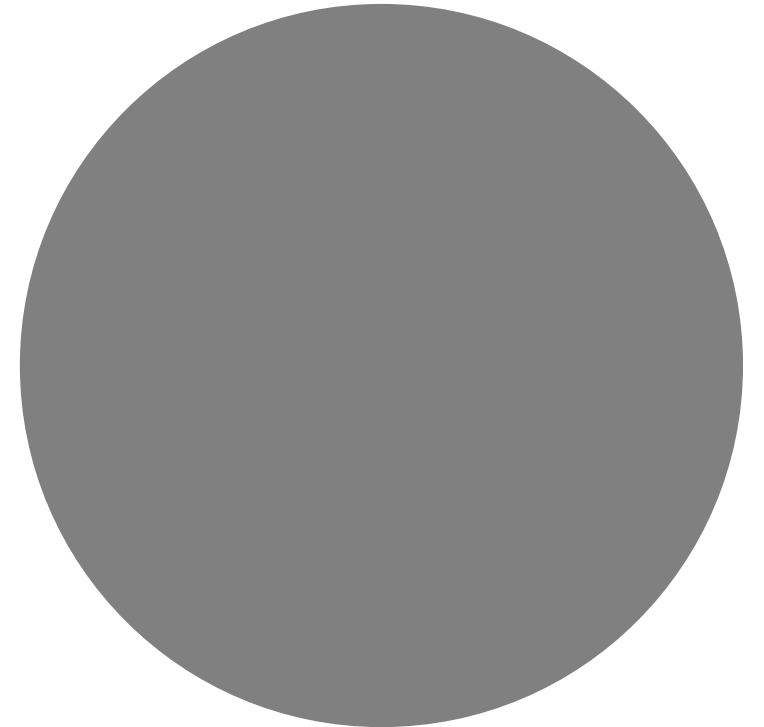
Coordinated development and management of water and land resources in a sustainable and equitable manner for the greater provincial interest and welfare of the people of Khyber Pakhtunkhwa

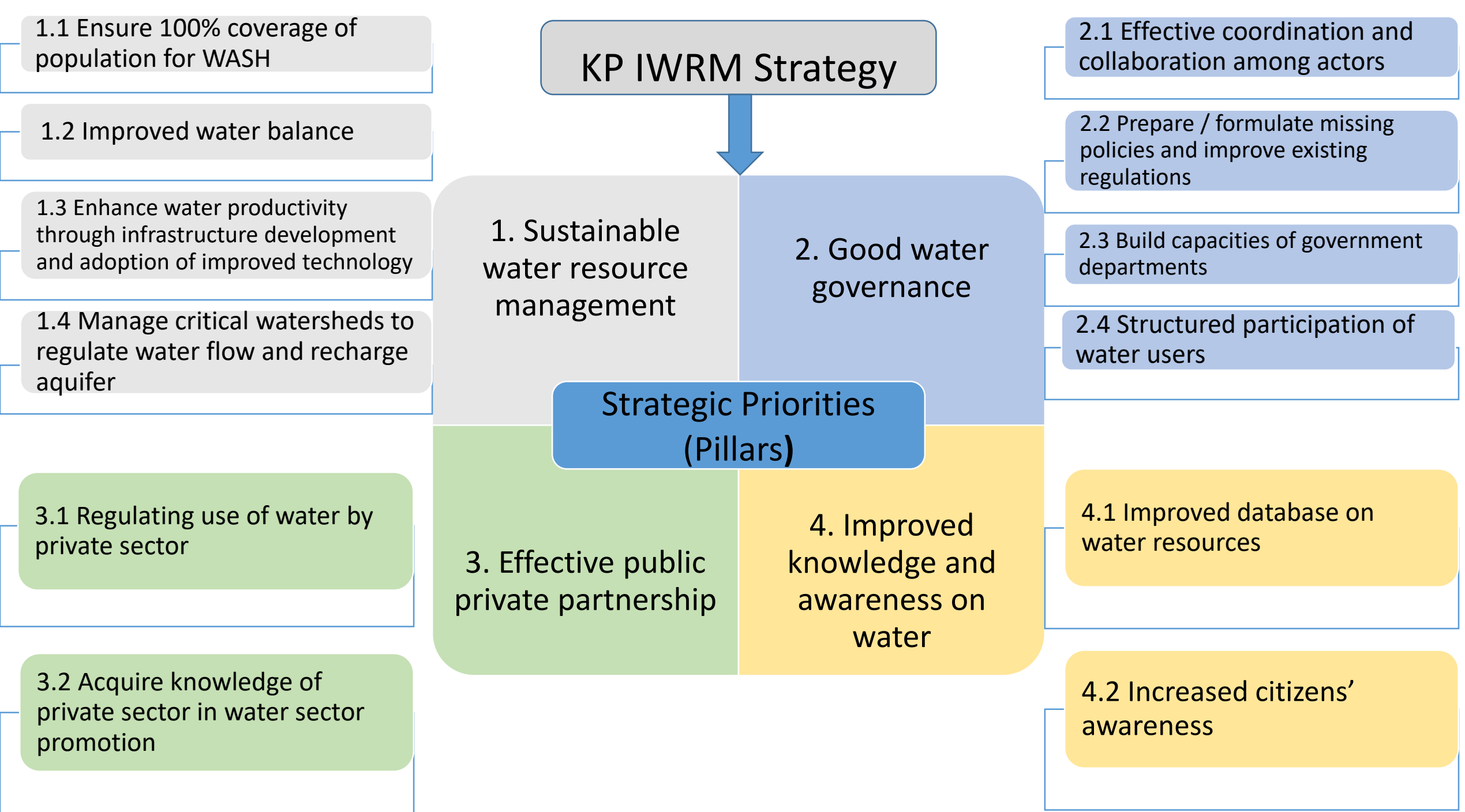
## **Overall objective**

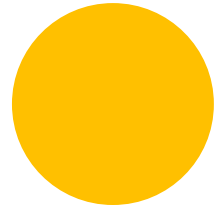
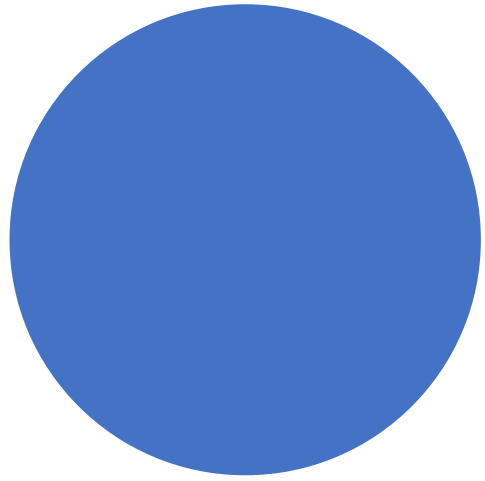
To optimize the economic, social and environmental returns on water resources, ensure equitable allocation among its competing demands as well as judicious use by consumers and safe disposal of post-use effluents

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# **Goal and Objective**





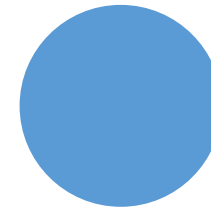


# Sustainable water resource management

4 Priorities

- Clarify roles, jurisdiction, TORs and mandates and ensure effective coordination to avoid overlap (LGRD, Local Council Board, TMA, WSSCs, PHED and private sector).
- Prioritize rural access to drinking water, sanitation, waste management and hygiene services.
- Urban water management, sanitation and solid waste management.
- Upgrade existing water infrastructure and improve maintenance system.
- Specify minimum quality standards for drinking water provided by all providers and ensure compliance. (replace this card with actual agreed standards).
- Promote decentralized waste-water treatment, reuse, and safe disposal in domestic and commercial sectors.
- Citizens' awareness raising on making efforts in waste reduction and recycling.
- Introduce state of the art solid waste management systems.
- Promote Open Defecation Free (ODF) environment.
- Introduce domestic water metering, pricing and monitoring (start with urban / WSSC areas).

## **1.1 Ensure 100% coverage of population for WASH**

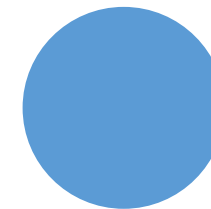


- Build new water storages (small, medium, large).
- Integrate rainwater harvesting techniques in district IWRM plans and development schemes where feasible.
- Upgrade existing water infrastructure and improve maintenance systems.
- Improve conveyance efficiency of irrigation system (including lining of channels, remove leakages due to wear and tear).
- Improve farm irrigation efficiency through introduction of high efficiency technologies.
- Define and ensure minimum quality standards for irrigation water.
- Conduct groundwater study for KP and maintain groundwater atlas and database for planning finances and strict monitoring on abstraction trends.
- Regulate groundwater mining through creating a centralized system of NOC and water metering and pricing.
- Further quantify spate potential in KP as a contribution to water account.
- Equitable distribution of Rudh Kohi water (western hill torrent) based on proven experiences in DI Khan.
- Deploy all structural and non-structural means to improve aquifer recharge of groundwater.

## 1.2 Improved water balance

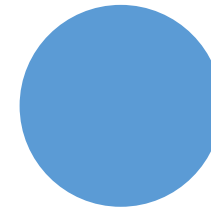
- Conduct research in new and appropriate technology and approaches at farm level.
- Promote new water efficient technology in agriculture including precision land levelling, tunnel farming, furrow irrigation.
- Raise farmers' awareness on the need to follow crop per drop approach.
- Make arrangement for disseminating climate related information to the farmers for early preparedness through mobile phones.
- Extend existing irrigation facilities to new cultivable command areas.
- Develop Agro-ecological and crop zones based on land and water suitability.
- Prioritize water consumptive crops for rigorous promotion of water productivity campaign and support.
- Promote small dams, development of infiltration galleries and sub-surface dams for irrigation in rainfed areas for low delta crops.
- Improve farmers-led Rudh Kohi water distribution system for up, mid and downstream irrigation efficiency.
- Study power generation potential from small dams on perennial flow beside other uses of water.
- Devise a system of water supply based on crop-water demand as oppose to standard warabandi system in irrigated areas.

## **1.3 Enhance water productivity through infrastructure development and adoption of improved technology**

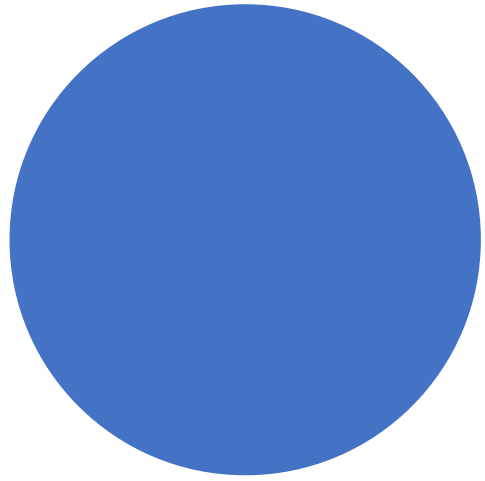


- Improve vegetative cover in all the watersheds including state and private lands.
- Support and augment integrated watershed management initiatives especially in high altitude areas (including tree plantation, grazing management, encouraging natural growth).
- Promote appropriate measures and techniques for enhancing groundwater recharge.
- Remove encroachments of streams, riverbeds, and drains to ensure safe disposal of water.
- Implement a network of small dams in the south to support rainfed areas.
- Harness KP's full potential to generate power through small and micro-hydel power projects.
- Integrate watershed management costs in water storage infrastructure projects and ensure to initiate action before physical work begins.

## **1.4 Manage critical watersheds to regulate water flow and recharge aquifer**



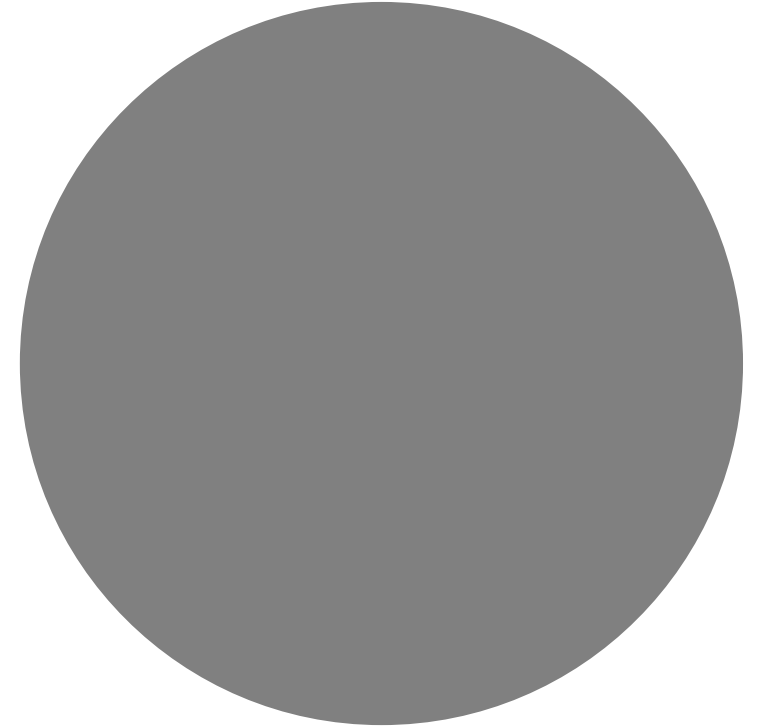




# Good Water Governance

4 Priorities

- Establish KP Water Council, Commission and Groundwater Authority
- Establish tehsil Integrated Water Resource Management committees.
- Formulate tehsil Integrated Water Resource Management plans.
- Update Rules of Business and regulations of individual departments with respect to IWRM functions.
- Assign single authority for water and sanitation functions as per administrative jurisdiction for improved accountability.
- Establish and strengthen water user associations at tehsil / town levels.
- Clarify roles and mandates of actors for maintenance of spate irrigation systems including Rudh Kohi infrastructure development and management.
- Enactment of KP Water Council, Commission and Authority, define procedures and rules of business.
- Define self-sustained structure and procedure (GWA, WC). GW authority to report to ACS like other departments. These structures are established with legal reference, who owns or houses GWA, and Commission. The commission will be approved through the Act of parliament.

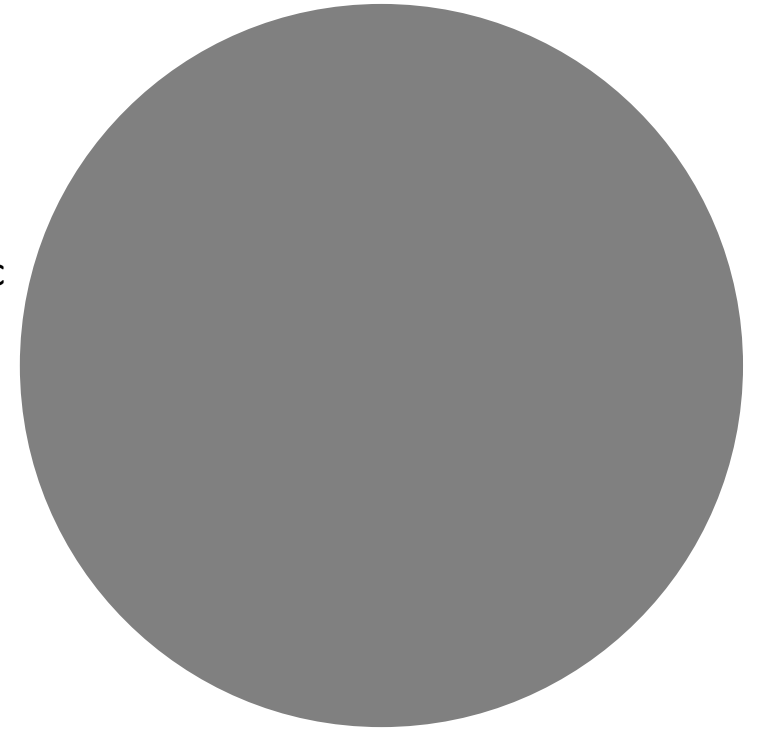


## 2.1 Effective coordination and collaboration among actors

- Conduct groundwater mapping and identify hotspots of problem.
- Prepare necessary regulation for independent GW monitoring through GW Authority.
- Formulate KP water pricing policy.
- Prepare necessary regulation for district / tehsil IWRM committees.
- Review and updating of Canal and Drainage Act 1873.
- Review of On Farm Water Management Act 1981.
- Legislation on establishing urban settlement based on land and water suitability and conservation.
- Review all subsidies in water sector and strategize step-wise reduction.
- Review and regularize funds collection in Rudh Kohi areas for development and maintenance of the system.
- Devising a system to check water theft from water bodies including streams, canals and illegal wells.
- Reinforce implementation of EPA Act 2014 to regulate water and air quality in the province.

## 2.2 Prepare / formulate missing policies and improve existing regulations

- Equip water departments with new technology for better monitoring of water (ICT tools and real time data simulators).
- Build capacities of monitoring cells on water resource monitoring and data management.
- Equip devolved administrative units with up to date operational equipment and machinery.
- Enhance capacity on real time river flow monitoring using telemetric system.
- Develop and install effective early warning system and communication based on hydrometric models and radars.
- Strengthen capacities of EPA to regulate and enforce powers entrusted to them by EPA Act 2014.
- Awareness regarding importance of citizens' participation in water management.
- Harness recreation and reuse potential from water to generate funds for water sector.
- Strengthen capacities of relevant universities to conduct proactive and demand-based research on water issues in the province.

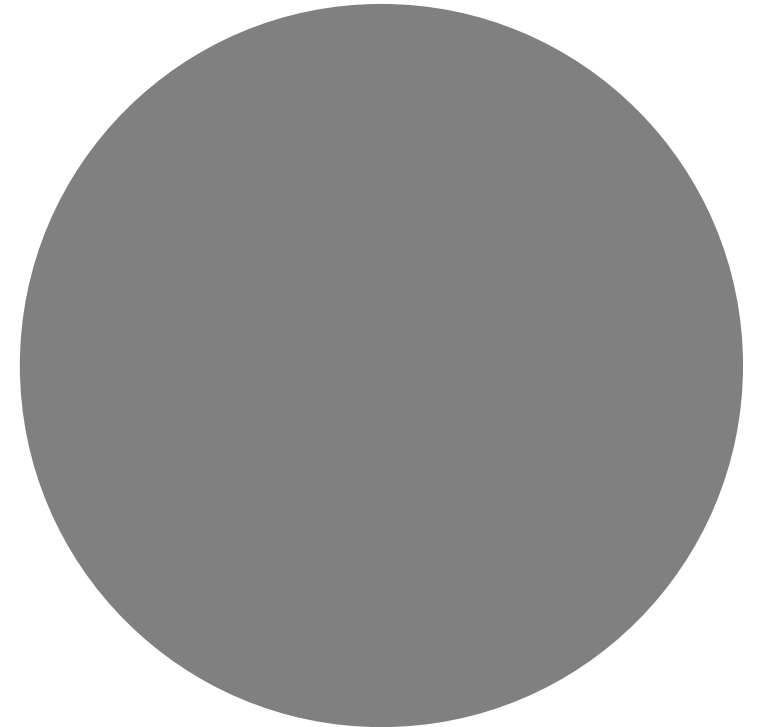


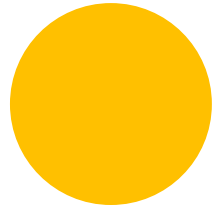
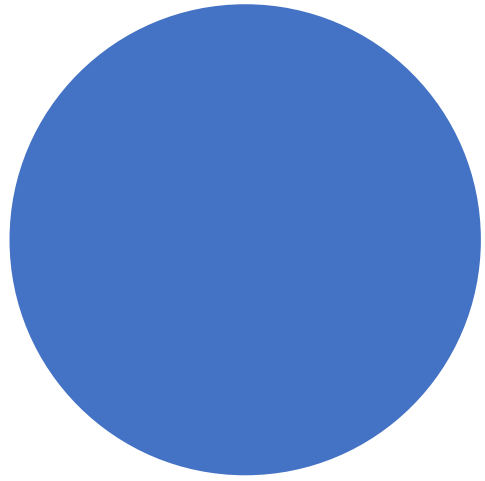
## 2.3 Build capacities of government departments

- Develop a system to establish and strengthen WUAs at tehsil and town levels.
- Strengthen organizational capacities of water users and their associations.
- Strengthen user specific capacity in water sector to manage water issues.
- Provide legal legitimacy to WUAs for playing appropriate role in district IWRM planning with other actors.
- Include representative of WUAs and farmers' representatives in district / tehsil IWRM committees

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## 2.4 Structured participation of water users





# Effective public private partnership

2 Priorities

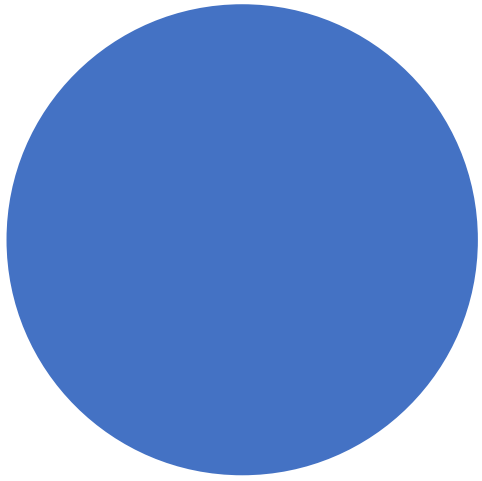
## 3.1 Regulating use of water by private sector

- Update information regarding size and typology of private sector.
- Maintain record of size and typology of private sector in the office of Secretary Industries.
- Enforce rules for industries to ensure in-house waste-water treatment and reuse before disposal.
- Develop incentive systems for promotion / adoption of clean technology.
- Water charges from private sector through metering and revenue collection.
- Develop easy to practice revenue collection system for private sector including online licensing and payment system.
- Facilitate and build capacity of private sector on efficient use of water resources and quality management.
- Enforce existing and new regulations through business associations.
- A thorough study on demand and current use of water by private sector by typology:
  - a. Map urban water management (including domestic and commercial)
  - b. Ascertain demand for water by private sector for their business
  - c. Ascertain quality and quantity of water released by private sector

## 3.2 Acquire knowledge of private sector in water sector promotion

- Collaboration for identification, calibration, and promotion of clean technology (commercial and domestic):
  - Water efficient technologies
  - Minimize reliance on freshwater
  - In house technologies for water treatment and recycling
- Motivate private sector to invest CSR funds in water actions priorities under the IWRM strategy.
- Encourage corporate sector to finance research on demand-based topics in water sector.
- Motivate private sector to raise awareness of citizens on water conservation through public interest advertising e.g. on judicious use of water and conservation.
- Ensured structured participation of private sector in IWRM decision making forums (e.g. KP Water Commission, district IWRM Committees) and regular inclusion in water related task forces.
- Encourage PPP model in low head hydropower projects.
- Conservation of water bodies for recreation use for water sports and fisheries (wetland conservation).





Improved knowledge and  
awareness on water

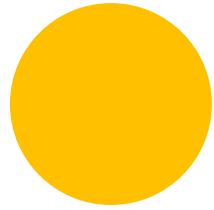
2 Priorities

## 4.1 Improved database on water resources

- Estimate water demand by all sectors and update on regular basis.
- Establish integrated data repository on water at provincial + district levels under the auspices and supervision of Water Commission.
- Regularly update infrastructure data including inventory of channels, tube-wells, storage, water schemes, Operation and Maintenance).
- Establish GIS and web-based infrastructure inventory and monitoring system.
- Maintain hydrology data with reliable equipment (KP water account).
- Install automated weather stations equipped with early warning system in all the major gaps.

## 4.2 Increased citizens' awareness

- Establish and update water related studies, data and easy to use information for generating mass awareness and interest.
- Mass awareness on safe WASH and water conservation behaviour in collaboration with private sector and donor-funded initiatives:
  - Using attractive visuals
  - Well-maintained website meant for citizens with room for periodical citizens' perception survey
  - Dramatized messages / skits or animations
- Acquire support from print and electronic media on the awareness messages of public interest
- Create a system of (i) warning, (ii) fine, and (iii) disconnection on misusing drinking water
- Encourage youth involvement in promoting water efficient practices.
- Encourage private sector in funding awareness campaigns in the education institutions on efficient use of water and behavioural change.



Thank You

