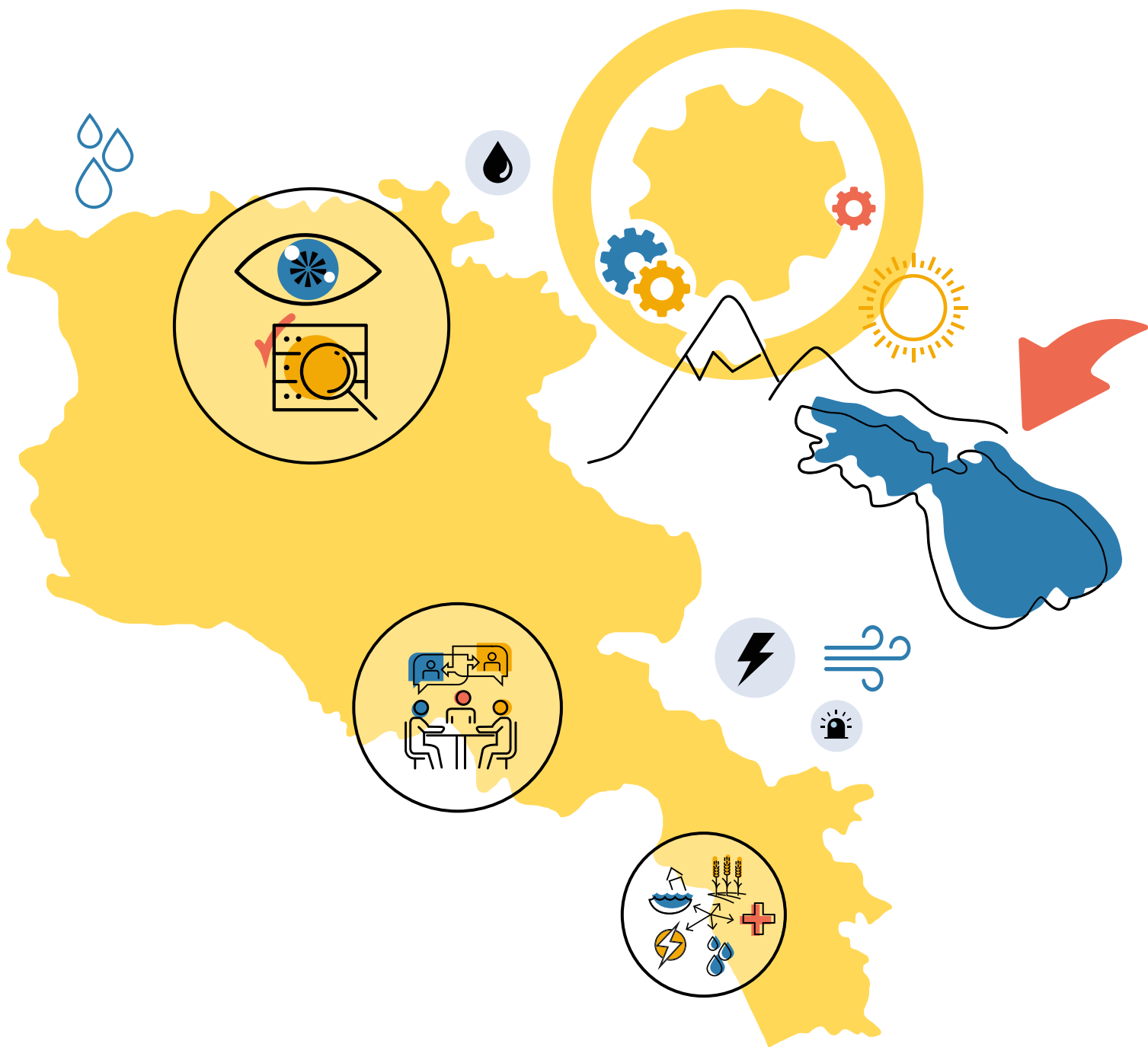


# Climate Services in the REPUBLIC OF ARMENIA



# GLOBAL FRAMEWORK FOR CLIMATE SERVICES

**The Global Framework for Climate Services (GFCS) envisions better risk management and more efficient adaptation to climate variability and change through improvements in the quality, delivery and use of climate-related information in planning, policy and practice.**

Promoted and facilitated by the World Meteorological Organization in cooperation with the GFCS Partner Advisory Committee, the GFCS focusses on developing and delivering information services in agriculture and food security; disaster risk reduction; energy; health; and water, and organizes its work around observations and monitoring; climate services information systems; research, modelling and prediction; user interface platforms; and capacity development.

The World Bank has supported the conceptualisation and establishment of a National Framework for Climate Services (NFCS) in Armenia through the Disaster Risk

Management project financed by the Japan–World Bank Program for Mainstreaming Disaster Risk Management in Developing Countries. From 2019 to 2020, the Switzerland-based international non-profit organization, Zoï Environment Network, has worked in close cooperation with the Hydrometeorology and Monitoring Center under the Ministry of the Environment of Armenia to develop the NFCS.

In-depth interviews with users of climate services were followed by a baseline study of hydrometeorological and climate information and services in Armenia and a series of online consultations with thematic clusters, bringing together in total close to 150 participants from various sectors. The online review of the NFCS concept and action plan helped better tailor the design of the Framework design to the needs of users Armenia, and confirmed the commitment of key stakeholders to the goals of improving how hydrometeorological and climate information is provided, accessed and used.

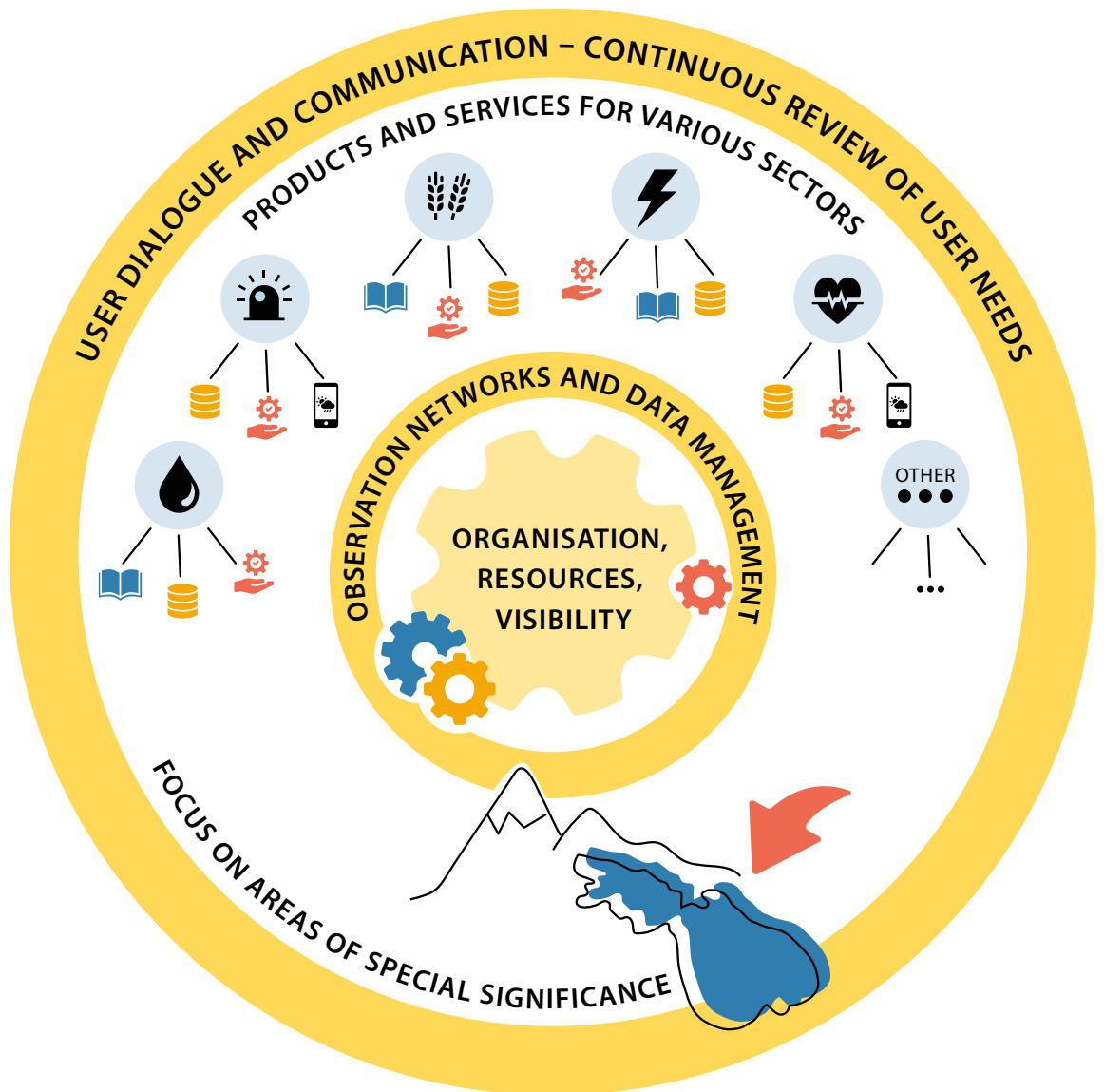
## ARMENIA CHALLENGES AND SOLUTIONS

Armenia's hydrometeorological observation network collects a vast array of data. Weather forecasts use observations at meteorological posts, as well as global and regional models, radiosonde observations and radar and satellite data. Other governmental entities, private companies, research, non-governmental and other organisations also collect data and provide services. But lack of resources remains a major constraint, as modern technologies are costly while low salaries make the state sector unattractive for qualified specialists, and much of the observation technology and monitoring equipment is currently out of date due to the lack of systematic funding and upgrades. Technical and human capacities also need to be improved to enhance the availability, quality and accuracy of forecasts and other services to meet the needs of various users.

In their daily work, users of hydrometeorological services face data gaps across a range of subjects. Some of these data are not collected at all or not at the required volume and resolution. Others are difficult to find and access. Although information is regularly provided to the Government and organisations with data contracts, only limited data are available online or through social media. And users often do not know what information exists, how it can be acquired or how much it would cost. There is considerable room for expanding interactions with interested users, who in turn can help conceive and shape innovative and relevant products by applying their expertise. Modern communication channels and tools can dramatically improve access to climate information. And all sources of funding and synergies are to play a role in bringing climate services up to the expectations of Armenian sectors, regions and people.

Elements of NFCS Armenia include both cross-cutting actions – such as improved dialogue with users, strengthening governance, sustainability and visibility of the NFCS – and actions involving specific sectors or areas.

**GFCS**  
priority sectors



The analysis of user needs and perspectives collected through interviews and consultations identifies several directions in which climate services in Armenia can be advanced.

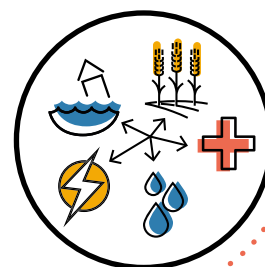
### User dialogue and communication

Strengthening the interface and dialogue with users of climate information and services by bringing them into the NFCS design and implementation, building their capacities and improving communication with them.



### Sector-oriented products and services

Building long-term partnerships with key sectoral recipients of NFCS information, identifying their needs, and co-designing and producing specific products and services together.



### Climate services for areas of special significance

Zooming in on areas of special significance for Armenia by focussing climate services on high mountains and Lake Sevan.



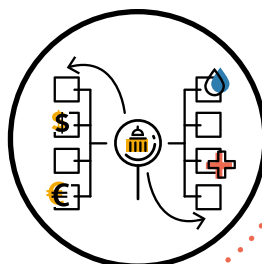
### Observations and data management

Modernising and expanding the sustainable observation and data basis for hydrometeorological and climate services.

































### Organization, resources and visibility











Shaping and sustaining an effective governance model of the National Framework for Climate Services in Armenia for years to come.





































## Action areas endorsed by NFCS stakeholders


- Regular dialogue with users and providers of climate services\*  
- Systematic collection and analysis of user feedback  
- Capacity-building for various user groups\*  
- Publishing clear information about available data and terms of access  
- Improving user-friendly online access to essential data  
- Broad and targeted dissemination of climate-change information  
- Modernisation and expansion of communication channels and tools  


- Continuous sectoral dialogue for co-design and co-production of services\*  
- Improving services for water resources management\*  
- Improving services for disaster risk reduction\*  
- Improving services for agriculture and food security\*  
- Improving services for the health sector\*  
- Improving capacities and services for other sectors\*  
- Assessing potential of satellite-based forecasting for various sectors\*  
- Producing sector-oriented data and projections of climate impacts\*  


- Modernisation and extension of data and services in high mountains\*  
- Projecting climate change and impacts in high mountains  
- Joining the High-mountain Observation, Prediction and Services Initiative  
- Strengthening monitoring, studies and data on Lake Sevan\*  
- Modelling the future of Lake Sevan under climate change\*  


- Modernisation of HMC observations and data management  
- New observation facilities for the HMC and other providers\*  
- Integration and co-production with unified environmental monitoring\*  
- Data exchange and intercalibration protocols\*  
- Extension of solar radiation, lightning and snow observations  
- Expansion of regular field expeditions  
- Assessing the potential use of satellite and drone imagery  
- Establishing HMC integrated data management system  
- Strengthening and modernising data quality control and management  


- Budget assessment and a financial model for NFCS actions\*  
- Assessing and improving the legal base for climate services\*  
- Assessing and implementing public-private partnerships\*  
- Institutional strengthening of the HMC  
- Strengthening of higher and continuing education in NFCS domains  
- Consistent NFCS funding package for international donors\*  
- Integration of NFCS actions in the National Adaptation Plan\*  
- Comprehensive NFCS visibility and communication strategy  

 — low budget needs

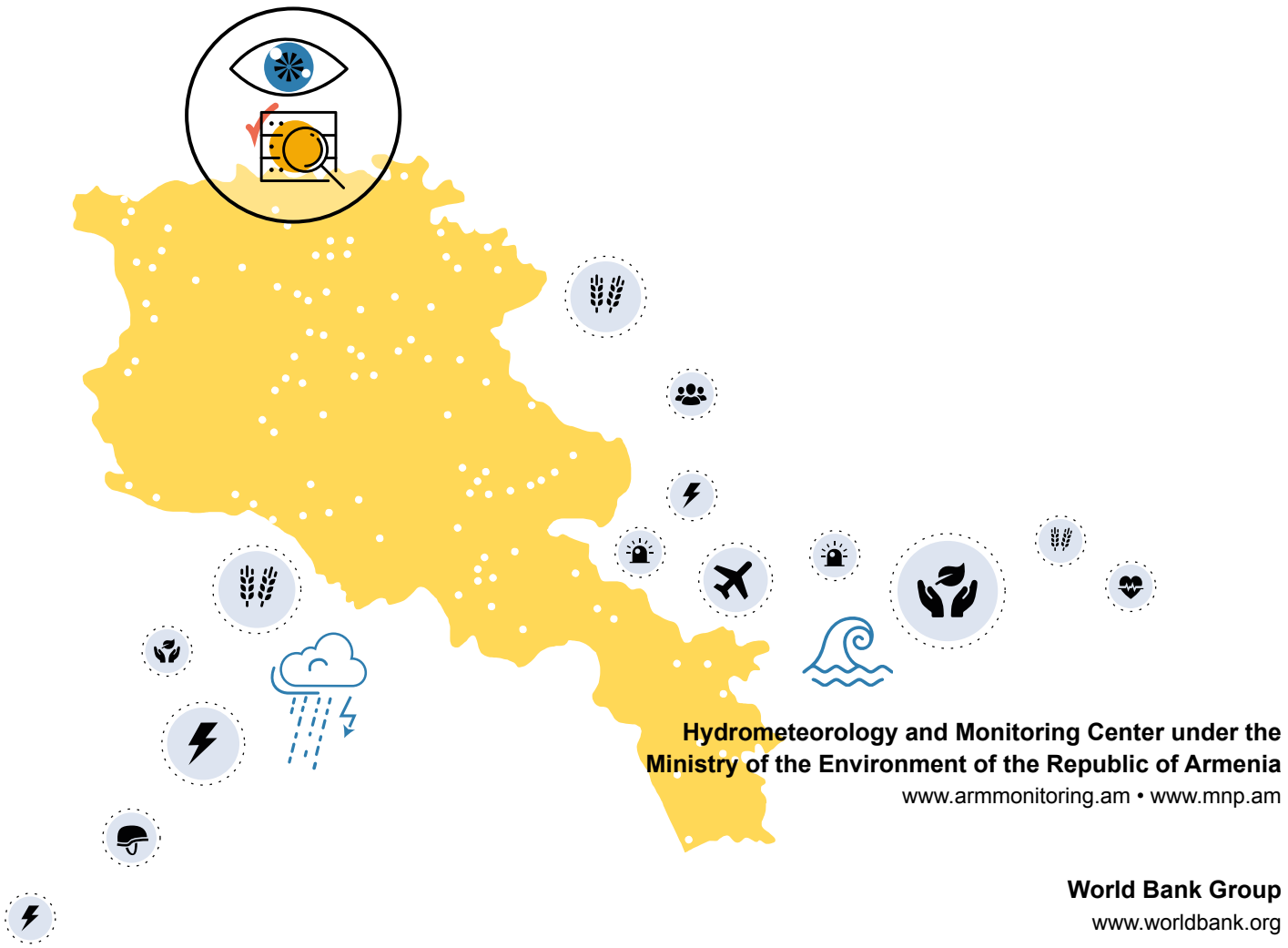
 — shorter-term actions (1—2 years)

 — moderate to significant budget needs

 — longer-term actions (3—5 years)

 — actions at both time-scales

\* Co-production or coordination with other sectors or service providers is required.



**Hydrometeorology and Monitoring Center under the  
Ministry of the Environment of the Republic of Armenia**  
[www.armmonitoring.am](http://www.armmonitoring.am) • [www.mnp.am](http://www.mnp.am)

**World Bank Group**  
[www.worldbank.org](http://www.worldbank.org)

**World Meteorological Organization**  
[www.wmo.int](http://www.wmo.int)

**Zoi Environment Network**  
[www.zoinet.org](http://www.zoinet.org)

