Bangladesh Delta Plan 2100: Knowledge Management

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Role of Knowledge in Delta Management

- Adaptive nature of delta management puts knowledge at a premium. Considerable uncertainties about future climate change (CC) behaviour have implications for changing delta strategies and policies.
- Availability of data and analysis of past and projected behaviour of CC, the expected pattern of weather related natural events, knowledge of global CC and regional experiences will all play important roles in guiding future strategies and policies.
- BDP 2100 would be continuously science and knowledge driven. The knowledge management approach is anchored in the Delta Vision and Goals

Information and knowledge management is also one of the core elements of the governance mechanisms of the BDP 2100. Informed decision making is required to be based on well-structured knowledge management

Need for a SITUATION Analysis

KM is a process of capturing, generating, storing, disseminating and using or applying information and knowledge. Knowledge generation is about continuous identification of needs, creation of knowledge, transfer, combination, and conversion of the different types of knowledge

4 areas of the KNOWLEDGE AGENDA

a. Knowledge creation;

b. Knowledge storage;

c. Data updates (as different from knowledge creation based on research)

d. Knowledge sharing, dissemination and use.

Delta-Related Government institutions maintaining Information Databases in Bangladesh

No.	Name
1	National Water Resources Database (NWRD) of WARPO
2	Integrated Coastal Resources Database (ICRD) of WARPO
3	Integrated Haors & Wetlands Resources Database (IHWRD)
4	Bangladesh Water Development Board (BWDB)
5	Bangladesh Meteorological Department (BMD)
6	Bangladesh Bureau of Statistics (BBS)
7	Directorate of Land Record and Survey (DLRS)
8	Survey of Bangladesh (SOB)
9	Local Government Engineering Department (LGED)
10	Roads and Highways Department (RHD)
11	Department of Environment (DoE)
12	Soil Resource Development Institute (SRDI)
13	Bangladesh Agricultural Research Council (BARC)
14	Fisheries Resource Survey System (FRSS) (DoF)

Institutions Involved in Knowledge Creation, Updating and Dissemination

Name of the Institutions			
a) Knowledge creation	**b) Data storage**	**c) Knowledge updates**	**d) Dissemination**
For example:	**For example:**	**For example:**	**For example:**
BARC	BBS	BBS	Delta Knowledge Hub and
BAU	BMD	BMD	linked institutions BARC
BCAS	BWDB	BWDB	BBS
BUET	DLRS	DLRS	BMD
CEGIS	DoF	DoF	BUET
DoE, MoEF	ICRD	ICRD	BWDB
DoF	IHWRD	IHWRD	CEGIS
IWM	LGED	LGED	DoE, MoEF
Ministry of Agriculture	NWRD	NWRD	DoF
SRDI	RHD	RHD	DLRS
RDA	WARPO	WARPO	ICRD
BARD	BMDA		IHWRD
BFRI	SPARSO		IWM
FRI			LGED
BARI			MoA
SSRC			NWRD
			RHD
			SRDI
			DAE

Source: BDP 2100 Analysis

BDP 2100 Knowledge Agenda

Knowledge Area No.	Issue	Most Important Research Questions
1. Climate Change	What are the local and regional consequences of climate change on the scale of 50-100 years over the Ganges, Brahmaputra and Meghna catchment areas?	1. How can tailor-made climate projections for different sectors and users for adaptation purposes be deveoped? 2. How can climate scenarios be drawn up with a high spatial and temporal resolution? 3. How does changing climate condition affect monsoon and tropical cyclone formation? 4. How quality of natural resources (soil, water and air) will change? 5. How international relations will change?
2. Adaptive Delta Management	How to integrate the principles of flexibility and iterative learning in delta management and how to exploit synergies between water resources related and other investment agendas of sustained food security and economic growth?	1. How can adaptive / flexible planning and delta management concepts (like adaptation pathways and scenario planning) be integrated, operationalized and institutionalized in water and related sectoral planning and management practices? 2. What changes (if any) are needed in the relevant national policies to improve ADM? 3. What should be the strategies to create a functional, applied adaptation research-practice-policy interface?

BDP 2100 Knowledge Agenda

3. Rivers and Eco-Systems	If the discharge of one of the major rivers of the country were to diminish dramatically, what would the consequences be?	1. How can one mitigate and adapt to a low-discharge situation? 2. What will be the hydro-morphological response in a low-discharge situation? 3. What are the environmental, social and economic consequences in a low-discharge situation? 4. How to keep aquatic ecosystems functioning? 5. How to restore degraded ecosystems?
4. Coastal Zone	How can future strategies be developed and integrated to provide a simultaneous answer to the myriad challenges facing the coastal zone (e.g. salinization, fresh water, food security, siltation, flooding, cyclones, land erosion and accretion, economic development, etc.)?	1. Sediment management in the coastal zone: a. What are the drivers of sedimentation and morphological processes? How can they be influenced e.g. to stimulate land reclamation? b. What is the potential for land reclamation? c. What is the effectiveness of Tidal River Management for water and sediment management in the medium and long term, considering technical and societal issues? 2. How to monitor the coastal issues in connection with ADM and identification of possible tipping points and how to characterize the physical and social science processes which govern coastal vulnerability? 3. What are the available fresh water sources and what drives water demand at present and in the future, in the Coastal Zone? 4. How can coastal ecosystems be made more resilient? 5. Study dynamics of resources quality and growth dynamics of Sundarbans.

BDP 2100 Knowledge Agenda

5. Flood Risk Management	What level of safety against floods for people, assets, agriculture and environment does Bangladesh want to provide in 2050 and 2100?	1. Which decision criteria are fundamental for flood risk management and how to justify these? 2. What is the expected future flood risk without any policy? 3. How effective are (non-)structural measures to decrease flood risk?
6. Water for Sustained Food Security	If food security is to be ensured, where will food production areas be in medium and long term and how will water for food production be available?	1. How can agricultural and food security research be strengthened in order to make farming and other sources of food production as well as availability, access and utilization of food be more climate-resilient? 2. What will be the projected food demand in the medium and long term and how can this be met? 3. How can agricultural and other food related practices be made more efficient in terms of land, water and other inputs in an integrated way (incl. crops, fisheries, forestry and livestock)?

BDP 2100 Knowledge Agenda

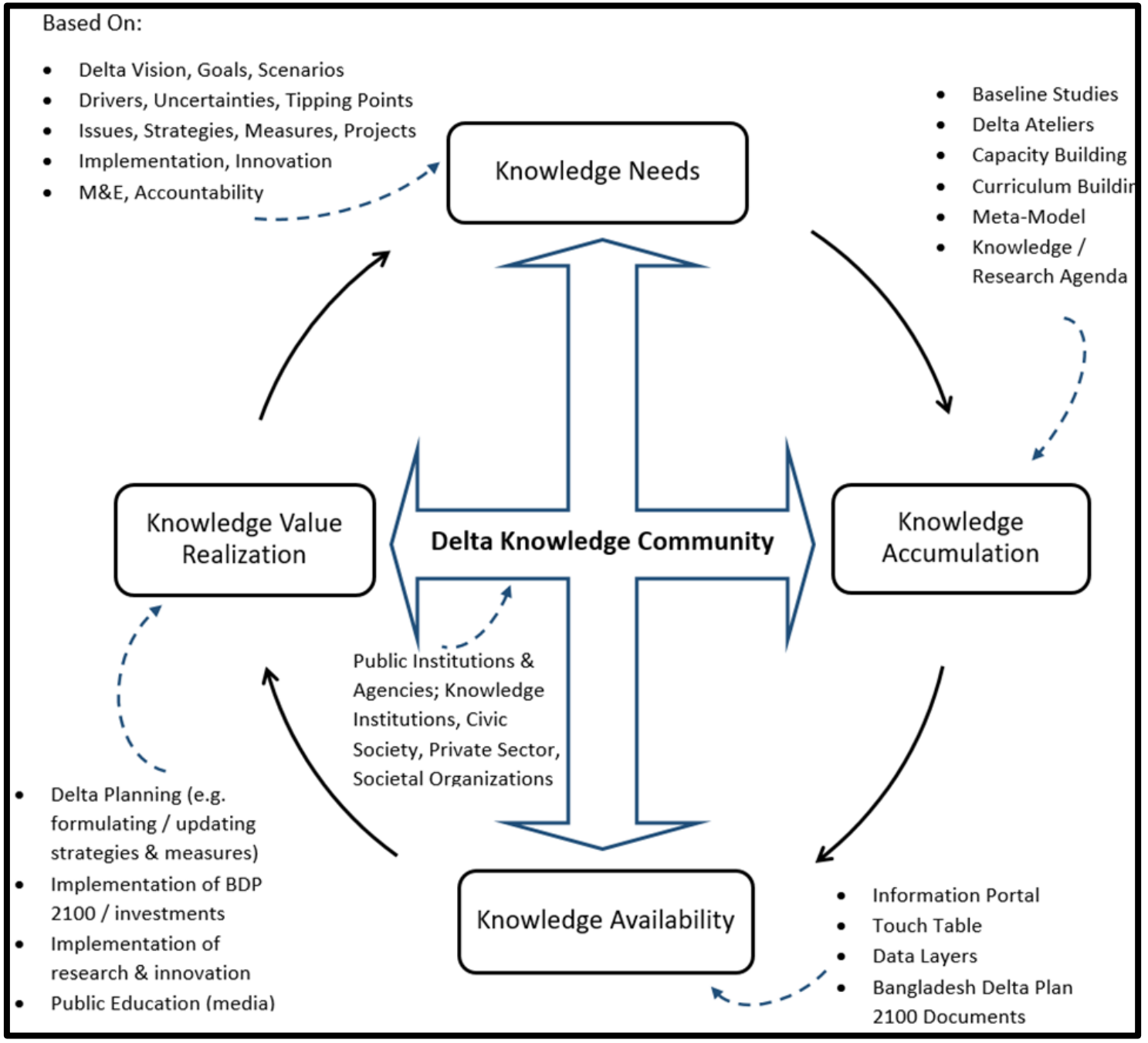
7. Urban Water Management	What is the trend of urban growth and how will cities deal with water and related problems (water supply and sanitation, drainage, water pollution, groundwater) under different urbanization scenarios in the medium and long term?	1. How to achieve inter-agency linkages for sustainable water management? 2. How to manage water supply and demand in an integrated manner? 3. How to prepare and ensure water sensitive urban planning?
8. Governance and Institutional Development	Preparing optimal institutional arrangements for continuous improvement of implementation and updating of BDP 2100.	1. How to reduce the gaps between planning and implementation? 2. How can local government better work together with national water-related implementing agencies on the short term? 3. How to prepare and realize decentralization of ADM and create Water Management Organizations with financial mechanisms for cost recovery?
9. Financial Arrangements and Funding	How to guarantee sufficient BDP 2100 related capital and recurrent resources to ensure a sustainable Bangladesh in 2100?	1. What combination of innovative fiscal and financial instruments (micro- to macro-scale) can be used ADM with a Delta Fund? 2. What are viable options for decentralized financing mechanisms in the water sector? 3. What is an effective Public-Private Partnership approach for Bangladesh?

Source: BDP 2100 Technical Team Analysis, GED, 2015

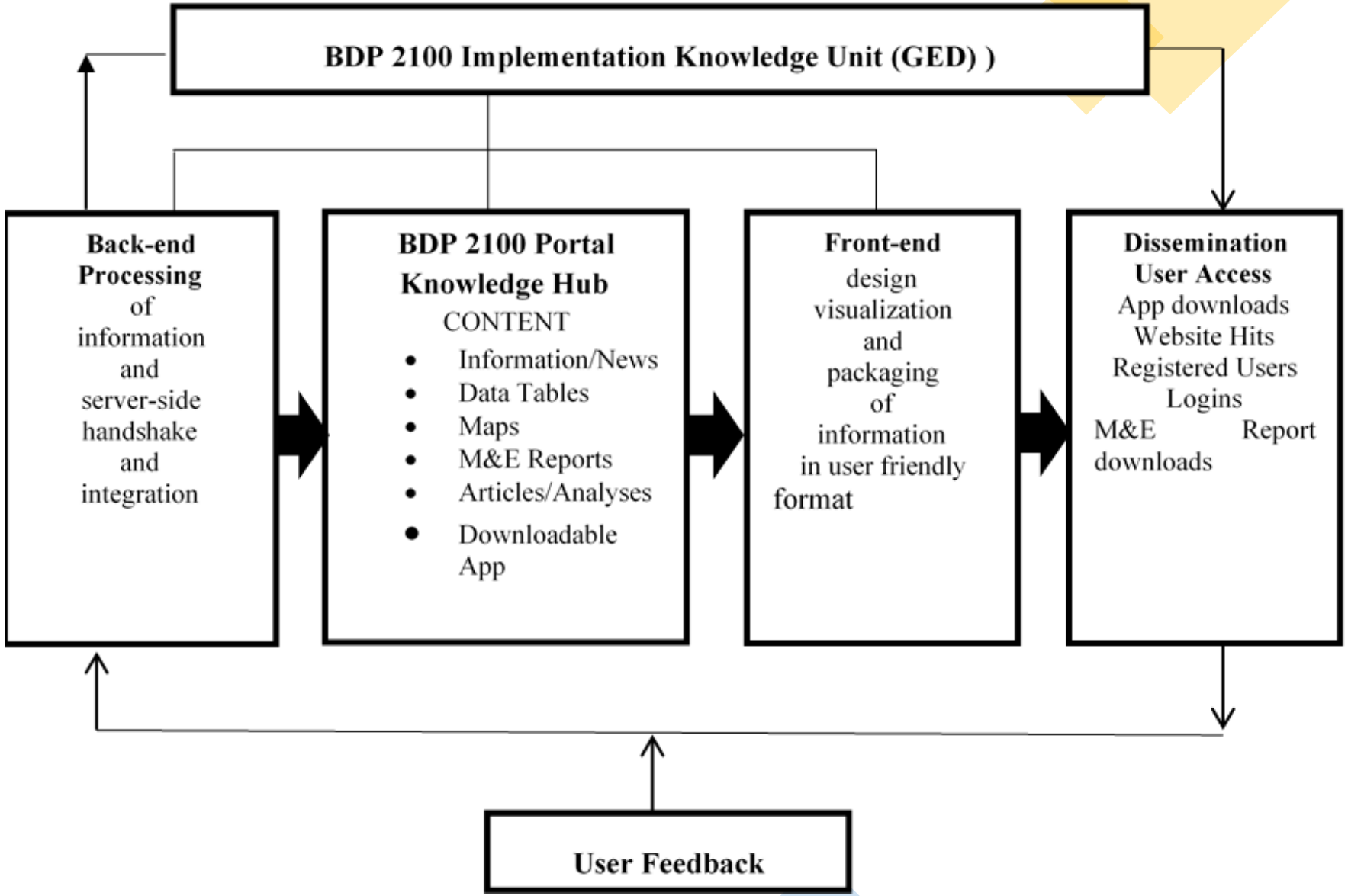
BDP 2100 Knowledge and Data Management Strategy

The sub-strategies:

- ❑ Investigate knowledge needs;
- ❑ Accumulate knowledge, conduct necessary studies, answer knowledge questions;
- ❑ Make knowledge and data available, establish a central Information Portal or knowledge hub and other means;
- ❑ Realize the knowledge value, make planning
- ❑ Develop and facilitate a Delta Knowledge Community with knowledge and data related partners;
- ❑ Arrange institutional setup and funding for Delta knowledge and data management related strategies and actions.

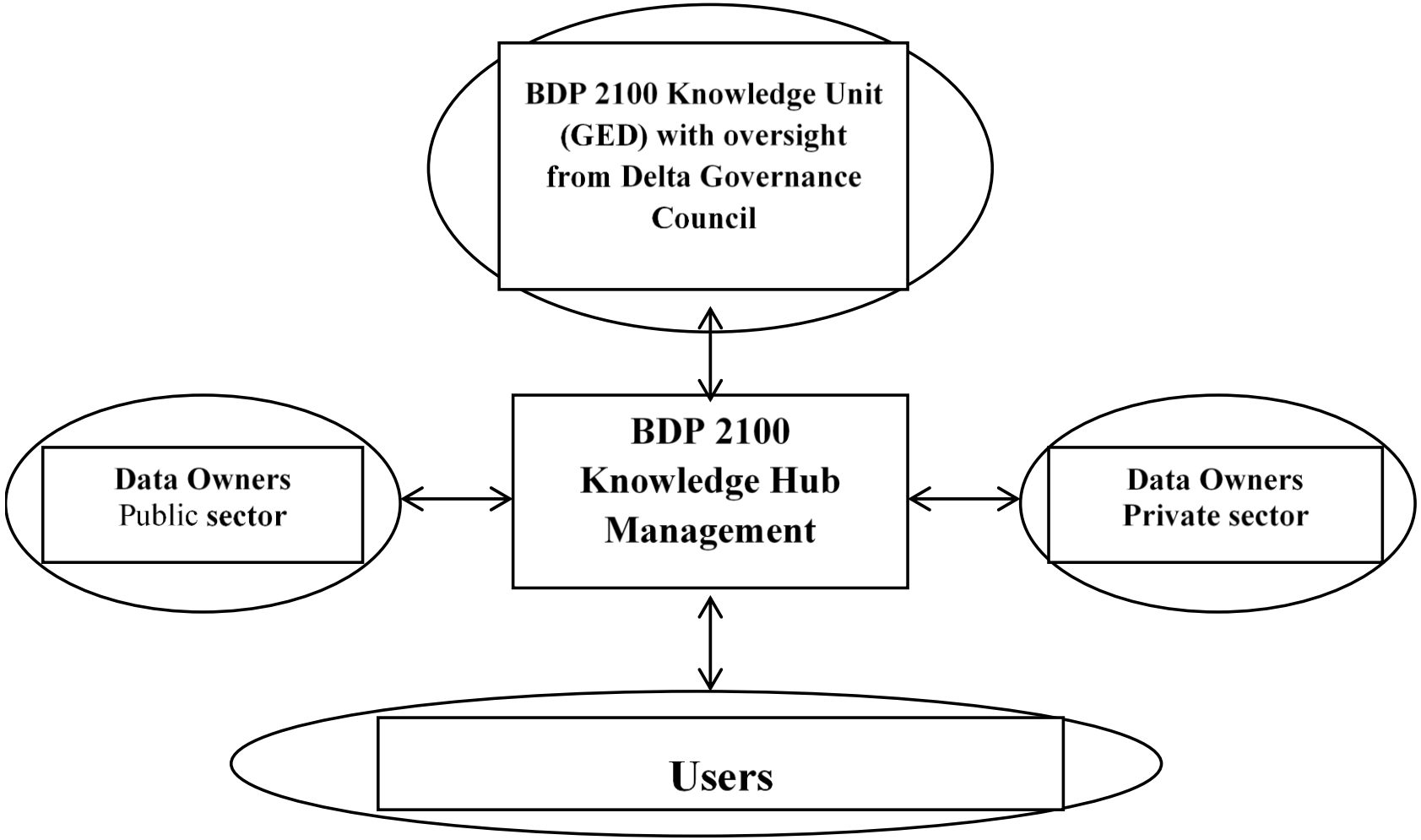


Institutional Set-up for Operating the Knowledge Hub



Institutional Mechanism: BDP 2100 Knowledge Hub

The day-to-day operations will be run by a Knowledge Hub management team under GED and overseen by the Delta Coordination Committee



Information Structure under Delta Knowledge Hub

Delta Tools

DELTA ATLAS

WEB VIEWER

PHOENIX FOR TOUCH

DESKTOP ANALYSIS

Delta Information Portal

Spatial Databases

Thank You