



འབྲུག་གི་སྤྱི་ཚོགས།  
དམངས་ཚུས་ཚོགས་ཁྲུང་།



**PARLIAMENT OF BHUTAN**  
**PUBLIC ACCOUNTS COMMITTEE**

---

**Report of the Public Accounts Committee**  
**to the Tenth Session of the**  
**Third Parliament**

(October 11 & 12, 2023)

---

---

“As a developing country, we have limited resources. We must manage our available resources wisely, minimize waste, and ensure that all our resources are directed at improving the wellbeing of the people, and in fulfilling our national vision.”

- His Majesty the King's address to the nation during the 111th National Day, Samtse, 17 December, 2018

---

## TABLE OF CONTENTS

---

Contents	Page No.
Members .....	i
Terms of Reference.....	ii
Introduction.....	1
 <i>Chapter 1: Review Report on Performance Audit Report on Irrigation System</i> .....	 1
1. Background.....	1
2. Key findings.....	2
3. Recommendations.....	6
 <i>Chapter 2: Review Report on Performance Audit Report on Preparedness for Cyber security</i> .....	 7
1. Background.....	7
2. Key findings.....	8
3. Recommendations.....	11
 Conclusion .....	 13



## MEMBERS

---

**Chair:** Honorable Gyambo Tshering, National Assembly Member for Bardo Trong Constituency

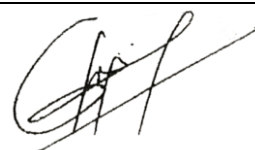
**Deputy Chair:** Honorable Dawa, National Assembly Member for Chhoekhor Tang Constituency

**Members:** Honorable Phuntsho Rapten, Eminent Member, National Council  
  
Honorable Jamyang Namgyal, National Council Member for Pema Gatshel Dzongkhag  
  
Honorable Hemant Gurung, National Assembly Member for Lhamoi Dzingkha Tashiding Constituency

**Secretary Staff:** Mr. Tshering Wangchuk, Legal Officer & Committee Secretary  
Legal & Procedural Service Division  
National Assembly Secretariat  
  
Mr. Sangay Penjor, Asst. Research Officer & Committee Secretary  
Research and Hansard Division  
National Council Secretariat

**Contact Details:** Public Accounts Committee  
Parliament of Bhutan  
Langjophakha, Thimphu: Bhutan  
[pac@nab.gov.bt](mailto:pac@nab.gov.bt)

**Telephone:** 02 339982  
**Facsimile:** 02 324210  
**Website:** <http://www.nab.gov.bt>



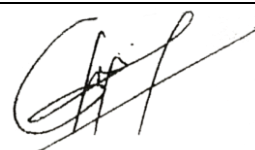
## **TERMS OF REFERENCE**

---

The Public Accounts Committee is mandated to review and report on the Annual Audit Report to Parliament for its consideration or any other reports presented by the Auditor General as enshrined in Article 25(6) of the Constitution of the Kingdom of Bhutan.

The functions of the Committee as per the Rules of Procedures of Public Accounts Committee 2017 are to review and report to the Parliament on:

- 1) The economy, efficiency, and effectiveness in the use of public resources in the implementation of Policy (ies) rather than on the merits and demerits of the Policy (ies);
- 2) Transparency and accountability in the resource allocation and its utilization;
- 3) Various reports of the Auditor General the Committee chooses to review;
- 4) The reports of the independent auditor on operations of the Royal Audit Authority;
- 5) The accounts, financial statements and performances of public corporations, public companies and agencies in which public funds have been invested; and
- 6) Such other accounts and reports as may be referred to the Committee by the Joint Sitting of the Parliament.



## INTRODUCTION

The Royal Audit Authority (RAA) tabled the Performance Audit Report on Irrigation System and Performance Audit Report on Preparedness for Cybersecurity to the Eighth and Ninth Session of the Third Parliament respectively.

The Public Accounts Committee (PAC) examined these reports to assess and understand the irrigation system and the preparedness for cybersecurity in the country. As a part of its review process, PAC conducted field visits and invited responsible agencies and RAA for consultative meetings to facilitate real time discussion, clarification and way forward to address the issues.

Agriculture is the biggest consumer of the country's fresh surface water through irrigation. Bhutan is known for its rich surface water with five major river basins yet only 25% of the total cultivated area is under assured irrigation, while the remaining depends on rain for the water requirement. Water is sufficient when aggregated at the basins level but it is scarce at individual watersheds level for irrigation.

The report consists of:

- Chapter 1: Review Report on Performance Audit Report on Irrigation System; and
- Chapter 2: Review Report on Performance Audit Report on Preparedness for Cybersecurity.

### Chapter 1: Review Report on Performance Audit Report on Irrigation System

#### Background

Performance Audit of Irrigation Systems was conducted with the overall objective to ascertain the economy, efficiency, and effectiveness in the development and management of reliable, adequate, and sustainable irrigation systems and supported by the following sub-objectives:

- i. To ascertain whether a proper institutional framework is in place for efficient and effective planning and development of reliable irrigation systems;
- ii. To assess whether adequate irrigation facilities are provided; and
- iii. To assess the economy and efficiency in managing the irrigation facilities to ensure sustainability.

The report has been prepared based on the review of Acts, Regulations, Policies, Plans, analysis of secondary data, and discussion with relevant officials of the Department of Agriculture, Watershed Management Division, National Environment Commission Secretariat, Dzongkhag Agriculture and Gewog Extension Officials, Water Users Associations, and Tshogpas.

### **Key Findings**

On review of the existing institutional arrangements for the development of irrigation infrastructure, the following inadequacies and deficiencies were noted:

- i. Inadequacies in institutional structures to implement Integrated Water Resources Management.**

Section 6 of the Water Act of Bhutan 2011 emphasizes decentralizing the authority of water governance within the river basins. For this purpose, the National Environment Commission (NEC) is mandated to establish River Basin Committees (RBCs) for each river basin that will formulate and implement the Integrated Water Resource Management (IWRM) Plans within their respective basin. While NEC has developed National Integrated Water Resource Management Plan (NIWRMP), River Basin Committee (RBC) had been established only for the Wangchhu River Basin in 2016. The remaining four major river basins (Amochhu, Punatsangchhu, Mangdechhu, and Drangmechhu) currently do not have RBCs and the systems and structures are yet to be rendered, institutionalized, and implemented.



**ii. Non-implementation of the Integrated Water Resource Management approach.**

As water is managed locally, implementing IWRM at the river basin level is recognized as an essential element and a comprehensive process for managing water resources more sustainably. Understanding this importance, the Wangchhu Basin Committee (WBC) was established, as a pilot basin. In order to implement the IWRM approach at the river basin level and to cater to the competing demands of different users, the Wangchhu River Basin Management Plan (WBMP) was also prepared. However, the progress of the WBMP was neither monitored nor assessed by the NEC, who is responsible for implementing the IWRM approach at the national as well as river basin level.

**iii. Water User Associations (WUAs) are yet to be instituted for effective function.**

Water Act of Bhutan 2011 and its regulation requires establishment of Water Users' Association (WUA) to maintain water source and manage water supply services. Accordingly, the DoA is entrusted to facilitate and support the formation of functional WUAs through capacity development and formalize regulatory systems by registration of WUAs with relevant agencies. Despite having such requirements in the legislation with clear responsibilities delineated in the NIP, it was noted that WUAs are yet to be instituted for all water sources except for a few major irrigation schemes.

**iv. Non-development of comprehensive information on water resources.**

A preliminary 'water resource inventory' was developed by NEC in 2018 in collaboration with other agencies. However, it also does not include springs, lakes, ponds, and any other water bodies, which are also water resources. Further, the inventory for all 186 watersheds has not been done and the information in the water resource inventory was intended to be used for reference and not for decision making or design purposes. Due to the absence of comprehensive water resource information at the national level, the sustainable and strategic approach to planning and development of irrigation infrastructure would be impeded.



**v. Non-development of Procedure Manual for National Irrigation Policy 2012.**

The first ever Irrigation Policy was launched in 1992 to lay a foundation for a sustainable irrigation development in the country. Subsequently, the Royal Government of Bhutan has developed the NIP Procedural Manual 1993 to operationalize the intentions cited in the Policy document. The NIP 1992 was revised in 2012 which required the updating of the NIP procedural Manuals to operationalize the policy. Despite having such requirements cited in NIP 2012, DoA has still not revised and updated the NIP Procedural Manual. The DoA has developed the Irrigation Engineering Manual 2016 which is a comprehensive document to be used in planning and designing irrigation schemes. However, except for the centrally executed projects, the practices prevalent across the local governments were noted to be inconsistent with this manual, thereby compromising the quality, usefulness, functionality and sustainability of the projects.

Further, the review of systems of operationalizing long-term plans (NIMP) and NIP through Five Year Plans showed the following shortcomings:

**i. Non-integration of NIMP into Five Year Plans resulting to inconsistent performance measures and indicators.**

The NIMP envisaged direct and indirect benefits of investing in irrigation development in the country. The direct benefits relate to increase in yield and crop production and the indirect benefits of increasing employment opportunity, support to livestock development, food security and development of climate resilient agriculture system, all of these constituting aspirations of national development goals. If the investment requirement for irrigation development in the country is not matched by sustained financing, it may be unrealistic to expect the desired results in the offing. Thus, the NIMP has been derailed and policy objectives remained adrift.

Moreover, there are no linkages in the performance measures and indicators formulated in the 12th FYP and NIMP. Therefore, the progress of the master plan cannot be tracked and monitored as clear linkages cannot be established between the two.

Furthermore, out of 645 schemes identified for implementation, only 40 schemes were implemented during 11<sup>th</sup> and 12<sup>th</sup> FYPs. This non-implementation of NIMP has resulted in:

- Irrigation sector not achieving the targets of NIMP;
- Inadequacies in research and development for irrigation technologies;
- Deficiencies in maintenance of irrigation schemes;
- Incomplete inventory of irrigation Schemes; and
- Decreasing food production (paddy).

**ii. Inadequacies in coordination among agencies in irrigation development.**

The DoA (at central level) and the Dzongkhags and Gewogs Administration (at local government level) are the primary institutions responsible for developing and managing irrigation facilities. The irrigation schemes which are beyond the capacity of Gewogs and Dzongkhags are undertaken by the DoA.

It was noted that the development/rehabilitation of irrigation schemes undertaken by LGs are not based on the list as per NIMP but depended on availability of budget of the respective LGs. There was no synchronized way of planning and prioritizing for development or rehabilitation as well during execution of the projects. Even for the irrigation systems which were centrally executed by the Agriculture Engineering Division, DoA, there are no administrative arrangements for collaboration with the Dzongkhags during implementation. Lack of coordination was also noted between DoA and DoFPS in terms of complementing its roles in managing water source and watersheds through sharing of information.

Further, there is also lack of coordination with other agencies, which has resulted in causing damages to irrigation schemes due to expansion of roads and other developmental activities. During the field visits, the RAA came across seven irrigation schemes damaged by construction of roads and developmental activities.

**iii. Non-enforcement of multi-disciplinary feasibility studies.**

NIP 2012 stipulates that *'feasibility studies including technical feasibility, social and economic benefits should be done one year before implementation to ensure the sustainability of the irrigation schemes.'* However, during the field visits to Dzongkhags, the RAA noted that there is no practice of carrying out multi-disciplinary feasibility studies while proposing the irrigation projects. Further, there is no prescribed process or guideline for conducting multi-disciplinary feasibility studies except for the policy intent.

**Recommendations**

Based on the issues observed and to improve the development and management of irrigation systems in the country, PAC recommends as follows:

- i. Department of Water (DoW) as a lead agency to expedite the operationalization of National Integrated Water Resource Management (IWRM) Plan.
- ii. DoA as a lead agency for irrigation system to review NIP 2012 and mainstream NIMP in successive five year plan to steer the sector to achieve the national goal of food self-sufficiency and security.
- iii. DoA in collaboration with Department of Infrastructure and Development (DoID) to continue to explore and adopt appropriate technologies for sustainable irrigation infrastructure.
- iv. DoA to maintain and update comprehensive inventory of irrigation systems in the country.
- v. DoA in collaboration with DoID to institute mechanism to enforce the requirement to carry out multi-disciplinary feasibility studies of irrigation schemes.
- vi. As per the requirement of the Water Act of Bhutan 2011 and its regulation to form WUAs, DoA in collaboration with Local Governments to facilitate the



institutionalization of WUAs for the effective beneficiary participation at all levels of planning, implementation and maintenance with required financial support to ensure sustainability of the irrigation schemes.

- vii. There is a need to have Standard Operating Procedure (SOP) amongst the DoA, DoID, DoW and LGs in the implementation of irrigation schemes across the country to ensure that the planning and development of irrigation facilities are in harmony with the strategic focus of the sector, besides ensuring a minimum quality of infrastructure. Therefore, MoAL to have administrative arrangements in planning, budgeting, execution and monitoring of irrigation infrastructure development.

## **Chapter 2: Review Report on Performance Audit Report on Preparedness for Cybersecurity**

### **Background**

Performance audit of preparedness for cybersecurity was conducted to ascertain the Government's efforts towards ensuring safe, secure, and resilient cyberspace in Bhutan. The sub-objectives are:

- i. To determine the appropriateness of the cybersecurity program/system in the country;
- ii. To examine whether the Critical Information Infrastructure systems are identified and security measures are implemented.

The report has been prepared based on the review of available documents, analysis of data, and discussion with relevant officials of the Bhutan Computer Incident Response Team (BtCIRT) under the erstwhile Department of Information Technology and Telecom (DITT), Bhutan InfoComm and Media Authority (BICMA), Office of Attorney General (OAG), Royal Bhutan Police (RBP), erstwhile Bhutan Electricity Authority (BEA), Royal Monetary Authority (RMA), Financial Institutions and Telecommunication Service Providers.

The performance audit of preparedness for cybersecurity was conducted in BtCIRT and Government Technology Agency (GovTech). The audit covered the period from the

inception of the BtCIRT, April 2016 to December 2022. The performance audit of preparedness for cybersecurity assessed the following six areas:

- i) Legal and Regulatory Framework;
- ii) Institutional Framework;
- iii) Cybersecurity Governance;
- iv) Capacity Building and Awareness;
- v) Risk Assessment of Identified Critical Sectors; and
- vi) Incident Handling Mechanism.

## **Key Findings**

### **i. Legal and Regulatory Framework**

The RAA, while assessing the existence and adequacy of the legal and regulatory framework for protecting and safeguarding citizens and their data, businesses, and critical information infrastructure, noted the following:

#### **a) Legal Framework**

The main legal document for cybersecurity or anything related to ICT for that matter is the Information, Communications and Media Act (ICM Act) which was enacted in 2018. For cybersecurity, in particular, the act has provisions for the protection of online and offline privacy, cybersecurity and data protection, and offences including grading and penalties of computer offences. The ICM Act 2018 did not cover all the required provisions for the cybersecurity. This led to referring to other Acts such as the Penal Code of Bhutan 2004 (amended 2021), Civil and Criminal Procedure Code of Bhutan (CCPC) 2001 (amended 2021) and Evidence Act, 2005.

**b) Cybercrime**

There is a lack of adequate legal frameworks and mechanisms to address cybercrime. There are no legal provisions defining cybercrime. Bhutan also does not have agreements for cross-border and multi-judicial investigation of cybercrime, with other countries besides India. The absence of an adequate legal framework on cybercrime would not only pose challenges to law enforcement agencies to combat and criminalise cybercrimes including cross-border investigations but also would make the country's cybersecurity more vulnerable to cyberattacks.

**c) Privacy and Data Protection**

Although there are adequate legal provisions for data privacy and data protection, the inadequacies in the enforcement mechanisms had inhibited the effective enforcement of the intent of, and compliance with, the ICM Act.

**d) Regulatory Framework**

There is no specific agency taking a lead role to regulate cybersecurity. As a result there is no assurance that the Critical Information Infrastructure (CII) is properly identified and secured. For instance, regulating agencies like Royal Monetary Authority (RMA), Bhutan Electricity Authority (BEA) and Bhutan InfoComm and Media Authority (BICMA) are identifying and monitoring their respective CIIs of those organizations that function under their jurisdiction. Such a disintegrated approach may lead to a diffusion of responsibilities in ensuring the implementation and enforcement of cybersecurity requirements and thus, exposing the CIIs to perpetual vulnerabilities and threats.

**e) Mandatory Cyber Incident Reporting**

In absence of protocols for cyber incident reporting, there is a lack of common understanding among the agencies to report cyber incidents and in the process, many cases would go unreported. At the national level, it would be difficult to

assess the country's threat environment and design strategic responses to cyber-attacks.

**f) Data Security in Google Workspace**

As Google Workspace is on the cloud, there is a risk to data security and privacy as government agencies are storing information in Google Workspace. Since there is no data classification at the national as well as agency levels, the confidentiality of sensitive information may not be ensured as agencies use Google Workspace for processing, storing, and communicating all official information.

**ii. Institutional Framework and Cybersecurity Governance**

The cybersecurity initiatives undertaken in the country lack strategic visions and directions, defined principles, and set priorities in managing cybersecurity risks with the National Cybersecurity Strategy (NCS) still in its draft stage. The RAA also noted that a risk assessment of the draft NCS had not been conducted, a monitoring and evaluation framework was not developed, Key Performance Indicators were inadequately set, coordination mechanisms were not defined and there is no dedicated budget for implementing the action plans identified in the draft NCS.

There is a lack of adequate attention and focus given to cybersecurity programmes due to the absence of a coordinated higher authority for cybersecurity, the cybersecurity governance committee. The national agency for cybersecurity, the GovTech (BtCIRT), is also not equipped with sufficient resources leading to its ineffectiveness in delivering their functions. The framework for identifying the CIIs which is essential for the functioning of the nation in terms of national security, economy, health, social welfare or safety, is still in its draft phase. The delay in the identification of CIIs would result in the exposure of the CIIs to potential cyber threats and the inability to institute adequate CII protection mechanisms. The inadequate capacity assessment framework to identify the cybersecurity capabilities both at the strategic and operational levels has resulted in the lack of capacity of the GovTech (BtCIRT).

While noting the initiatives taken by GovTech (BtCIRT), there is no proper information-sharing mechanism to institute a collective approach in information-sharing practices like involving IT professionals from all the essential sectors and proper identification of types of information to be shared.

**iii. Cybersecurity Awareness and Capabilities**

There is a no adequate cybersecurity capacity building and awareness to enable digital economy and ensure cybersecurity in the country.

**iv. Incident Handling Mechanism**

Incident handling is crucial for organisations to manage and enhance cybersecurity. An incident handling mechanism is a system that constitutes plans, procedures, tools and resources to prevent, protect, mitigate, detect, respond, recover and lesson learned from the incident. However, there is no proper monitoring mechanism instituted to ensure appropriate security measures implemented to remedy the security vulnerabilities identified in the Government Data Centre (GDC).

**Recommendations**

Based on the findings, the following recommendations have been developed to address the issues and guide the management to implement corrective actions.

**i. The GovTech Agency to review and improve the institutional and regulatory framework for Cybersecurity.**

Establish a coordinating leadership to provide strategic direction and empower the nodal agency for cybersecurity. Form institutional linkages amongst the policymakers, regulators, and implementors including SoEs and government agencies.

Further, GovTech as a national authority needs to expand the role of existing regulators. These regulators need to have adequate personnel with cybersecurity know-how and need to enhance enforcement and compliance mechanisms through



various means such as rules and regulations, license contract agreements, monitoring and reporting mechanisms, and accountability mechanisms.

- ii. The GovTech Agency to implement the draft National Cybersecurity Strategy with implementation plan, budget, monitoring and evaluation framework.
- iii. The GovTech Agency to expedite the identification and protection of Critical Information Infrastructures (CIIs) in the country.
- iv. The GovTech Agency to strengthen the legal framework for cybersecurity by reviewing the existing Acts, Rules and Regulations.
- v. The GovTech Agency to strengthen the enforcement mechanism for data privacy and protection against unauthorised disclosure and processing of personal data. In order to ensure data protection and security, the GovTech Agency should develop protocols to classify data to ensure that sensitive and confidential information is protected.



## **CONCLUSION**

The Public Accounts Committee is able to present this synthesized report to the Parliament with the continued support of the Royal Audit Authority, the National Assembly Secretariat, the National Council Secretariat, the auditees and other stakeholders involved.

With the blessings of our Guardian Deities, the enlightened and farsighted Leadership of His Majesty King, support from our People, Armed Forces, Judiciary and the Executive, we remain hopeful to continue enjoying peace, prosperity and happiness at all times.

PAC remains highly grateful to everyone.

Lastly, the Committee hopes for a meaningful deliberation, support and wisdom of the House, especially on the recommendations.

**\*\*\* TASHI DELEK \*\*\***

\*\*\*\*\*

