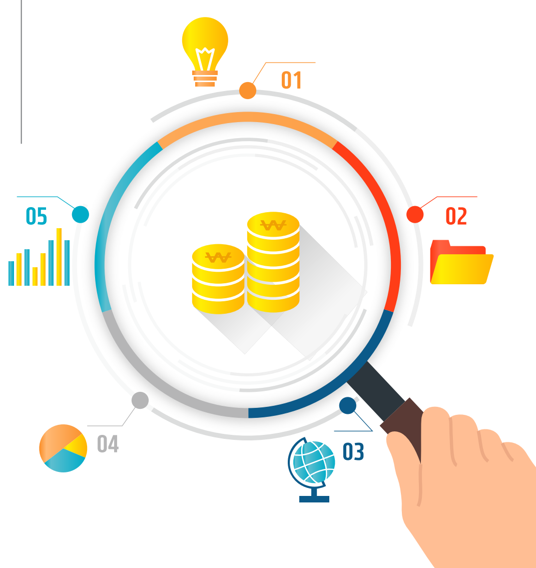
dBrain+ Integrated Financial Management Information System of Korea

Korea Fiscal Information Service

Contents

03 Key Features of dBrain$^+$

04 dBrain$^+$ for International Cooperation



01

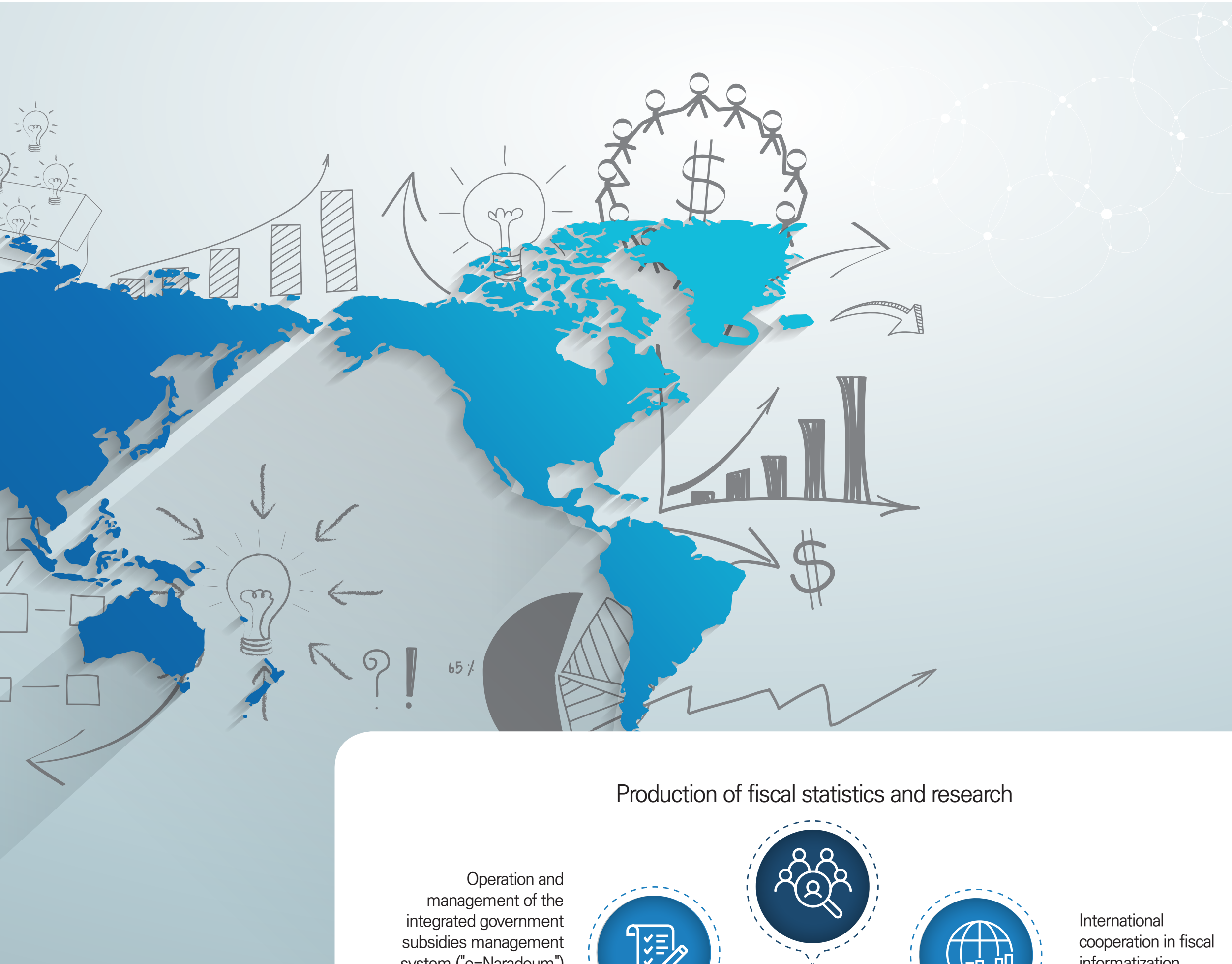
About the Korea Fiscal Information Service (KFIS)

A Leading fiscal Institution

in information security and financial innovation

1 Who we are

The Korea Fiscal Information Service (KFIS) is a public institution affiliated with the Ministry of Economy and Finance (MOEF). Our main objectives are to effectively operate and manage the Digital Budget and Accounting System (dBrain$^+$), ensuring its stability and reliability, and to support the development of overall public finance policies in order to facilitate the advancement of fiscal affairs. We also aim to encourage fiscal informatization of the international community by promoting international cooperation in the field of fiscal management information systems through the export of dBrain$^+$ and other relevant measures.



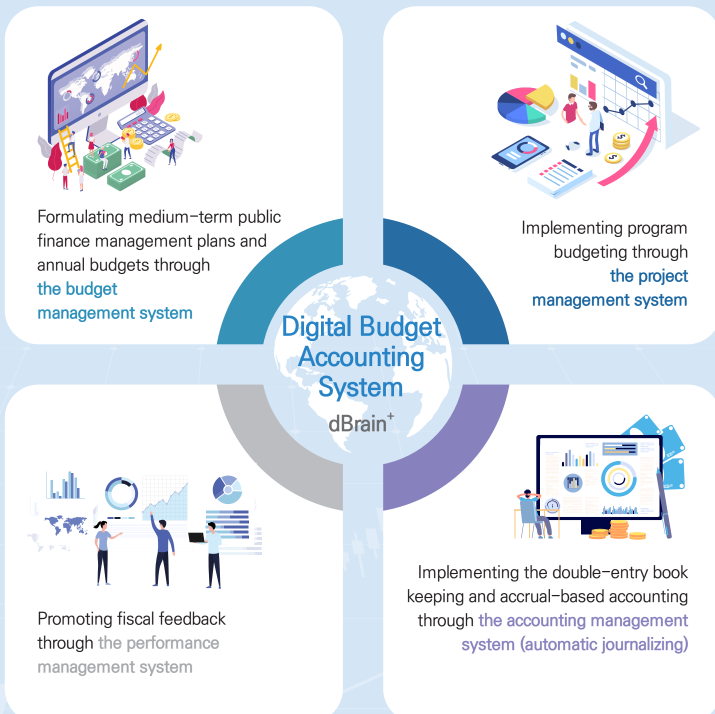
MISSION	VISION
To contribute to fiscal administration through fiscal informatization	To become a fiscal institution leading data-driven fiscal innovation

02 About dBrain^{+}

2.1 What is dBrain^{+}?

The Digital Budget Accounting System (dBrain^{+}) is an all-encompassing fiscal information system that computerizes all fiscal procedures like budget formulation and execution, fund management, transfer, state-owned property management, settlement of accounts, and performance management. It connects with 137 systems of 78 organizations, including the Bank of Korea, the National Police Agency, the Public Procurement Service, the Korea Customs Service, and the Korea Financial Telecommunications & Clearings Institute (KFTC). Approximately 48,000 public servants in central and local governments use this system to manage public finance. On average, 19,000 public servants access the system to process financial transactions such as fund transfers electronically every day. The system handles 150 million transactions worth 3,278 trillion won (approx.2,522 billion US dollars) annually.

An integrated financial management information system managing the entire life cycle of the national finances



- dBrain+ is a comprehensive fiscal information system that manages all fiscal processes online and connects with the financial systems of various organizations to produce valuable data.
- It is a system that incorporates all the innovations of the Korean fiscal system, such as the program budgeting system and the introduction of double-entry book keeping and accrual-based accounting. It allows for managing and analyzing the public finance in more detail and enables to establish more reasonable policies.

2.2 Milestones - System Building and Operation

First place of the United Nations Public Administration Awards was received

'13.06.23
Ranked top in "Promoting Whole-of-Government Approaches in the Information Age" by the Committee of Experts on Public Administration of the United Nations(UN)

2004

· Building an Integrated financial management information system was designated as a national project

· Public finance management plan was set up

- Medium-term (5-year) management plans and annual budgeting were combined

* NaFIS (National Finance Information System treasury system)
* FIMSys(Fiscal Informaion Management System budgeting system)

2005

· BSP, BPR, and ISP were formulated

· Top-down budgeting and program budgeting were introduced

- Expenditure limit per sector
- Top-down budgeting
- Bases for budget formulation, execution, and settlement
- Project-focused budgeting

* BSP(Business Strategy Planning)
* BPR(Business process re-engineering)
* ISP(Information Strategy Planning)

2006

The system was built and entered into pilot operation (with NaFIS and FIMSys integrated)

2007

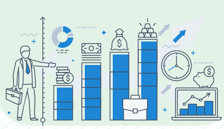
The Digital Budget Accounting System (dBrain) launched

2009

double-entry book keeping and accrual-based accounting was introduced

2013

First place of the United Nations Public Administration Awards was received



2015 ~ 2019

Open government fiscal information ("Open Fiscal Data") launched

Next-generation dBrain project commenced

2022

Next-generation Financial Management Information System (dBrain+) launched

03

Key Features of dBrain⁺

03

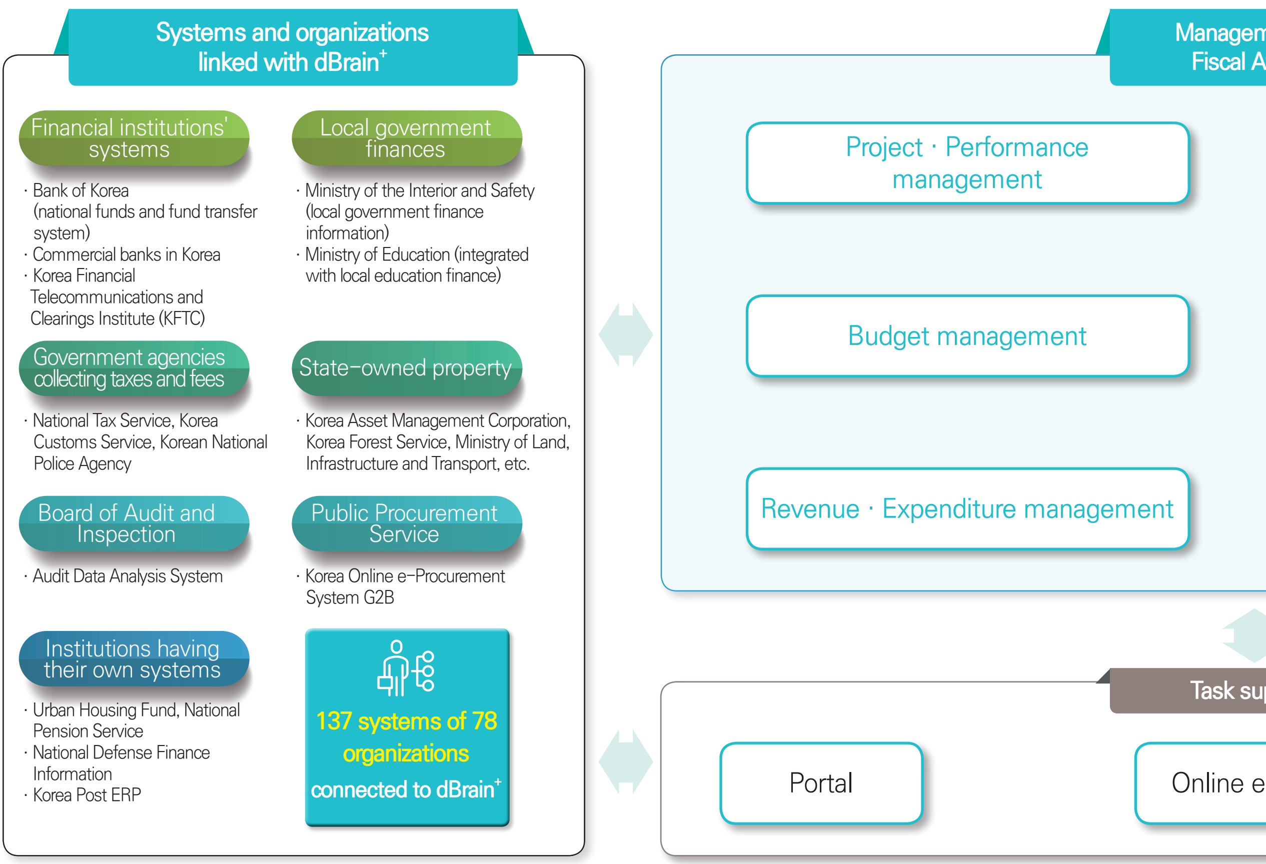
Functions of dBrain+

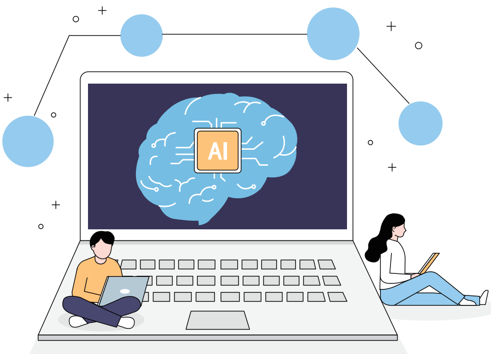
3.1 Key Features of dBrain+

3.1.1 System Configuration

This digital budget accounting system efficiently supports the management of the overall financial affairs such as budget formulation, execution, asset management, and settlement. It ensures the integrated management of fiscal information and provides transparent information to the public.

Configuration of the digital budget accounting system (dBrain+)





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Real-time national treasury (EBPP, EFT) management

Asset (state-owned property · commodities) management

Account settlement management

Fiscal Data System

Fiscal information service

Policy management

Data analysis center

Open Fiscal Data

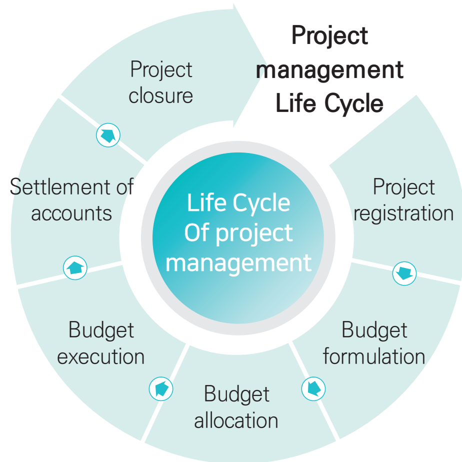
pport

ducation

e-Payment

3.1.2 Project Management

Project management is the foundation for budgeting and involves programs, unit projects, and subprojects. The projects of each ministry are registered as subprojects in dBrain+, and a yearly budget is requested based on these subprojects in the budgeting process.



3.1.3 Performance Management

Performance management entails establishing program objectives and performance indicators that aligned with the performance management system. It also involves utilizing performance data in public finance management.

Definition of performance management

- "Performance management" refers to the process where budgetary entities make their performance plans, carry out fiscal projects with limited financial resources, evaluate their performances, and incorporate the evaluations into the performance of policies, budgets, individuals, etc.
- Objectives
  - · To increase transparency and accountability in government budgets
  - · To improve the efficiency and effectiveness of fiscal projects
  - · To Increase allocative efficiency through budget reallocation

Performance management flow

Use performance data of fiscal projects in public finance management

Basic structure of fiscal performance target management

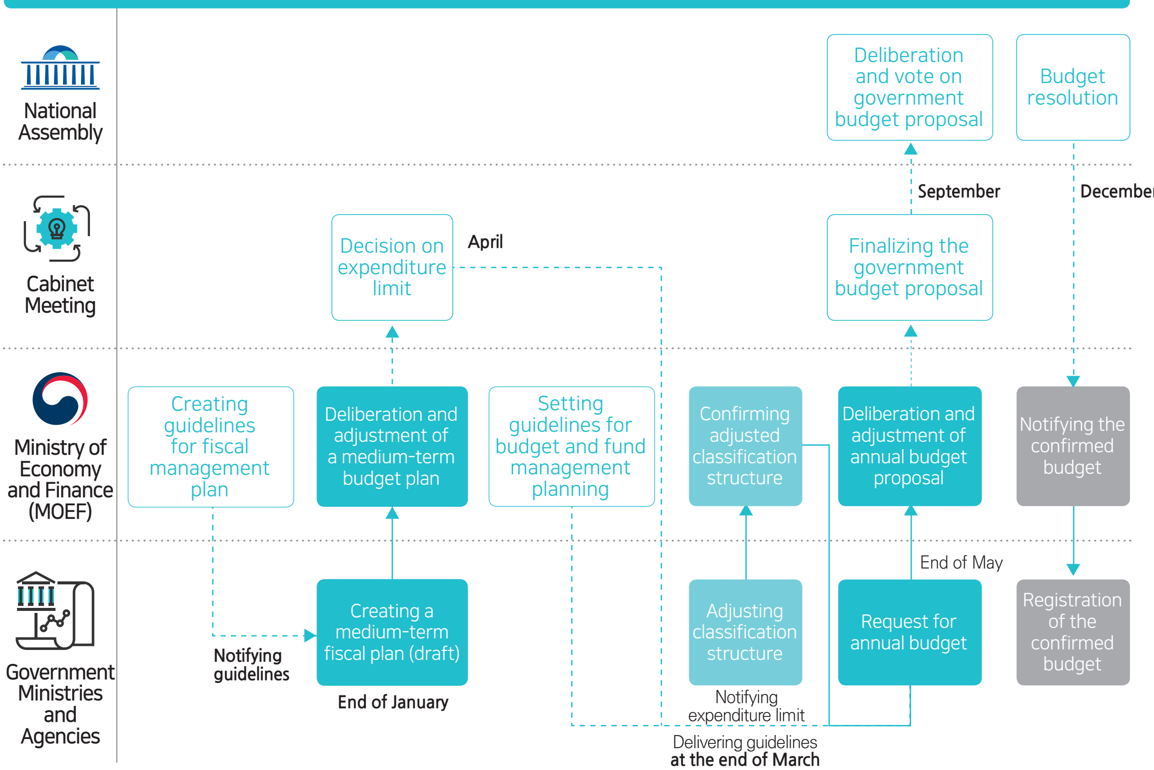
Performance planning (Y−1)	Public finance management (Y)	Performance assessment and reporting (Y+1)
Creating a performance plan (that sets performance objectives, metrics, and targets)	Allocating and executing budget according to the performance plan	Writing a performance report (that analyzes and reports on whether the objectives are achieved, causes of deficiencies, etc.)

3.1.4 Budget Management

Budget management involves planning national income and expenditure for a certain period of time, based on laws, regulations, and guidelines, and managing the process of allocating scarce resources.

In Korea, the government budget is managed (formulated/allocated) according to national revenue and expenditure plans for annual, medium, and long-term public finance management

Budget management (budget formulation) process



3.1.5 Revenue Management

Revenue Management is responsible for requesting and resolving the collection of taxes, duties, and money, managing notices, settling collections, and sending payment reminders for the sake of the national treasury.

Definition of Revenue/ Receivables

- "Revenue" refers to funds that are either paid into the national treasury or transferred to a specific fund as outlined in a statute or contract.
- "Receivables" refers to a right of the state to receive payment in monetary form.

Revenue/Receivables management work process

Revenue Workflow: from collection request to resolution, billing, payment, and monthly closing

Collection request → (Request for approval) → Resolution of collection → (approval) → Billing → (Sending) → Payment → (Payment confirmation) → Settlement of payments → Overpayment or erroneous payment/refund → Closing

Request for change → (Payment in installments, error correction, etc.) → Resolution of collection

Receivables Tasks performed to recover and manage receivables

Receivables recovery management
(payment reminder, investigation of delinquent's property)

Change management
(suspension of management, postponement of execution)

Expiration management
(Waiver of receivables. non-payment deficiency)

3.1.6 Expenditure Management

Expenditure management involves managing expenditure requests, commitment, expenditure resolutions, and transfer processing for the execution of public funds.

Definition of expenditure

- "Expenditure" refers to the payment of cash or the like from the national treasury to execute expenditure budgets and fund management plans.

· General expenditure is incurred to perform the actions that result in spending and to transfer government funds to the accounts of creditors or other concerned parties.

· Government office operating expenses refer to the costs incurred to run government offices. The cashier receives the necessary funds from the disbursing officer to make necessary payment.

Workflow of major expenditures

Workflow of general expenditure, provision, and payment of government office operation expenses

General expenditure Public funds transferred to the accounts of recipients within the allocated spending budget

Expenditure request → (Commitment) → Expenditure resolution → (Account transfer) → Recipient

Provision of government office operation expenses The disbursing officer transfers the funds required for running government offices to the national treasury accounts.

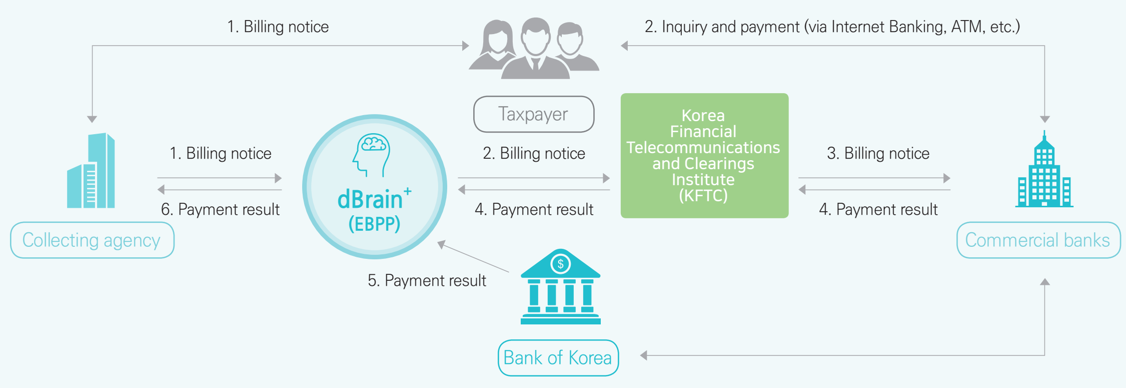
Payment request → (Commitment) → Expenditure resolution → (Account transfer) → National treasury account

Payment of government office operating expenses Government office operating expenses are transferred to the recipient's account upon request for payment.

Payment request → (Commitment) → Execution of payment → (Account transfer) → Recipient

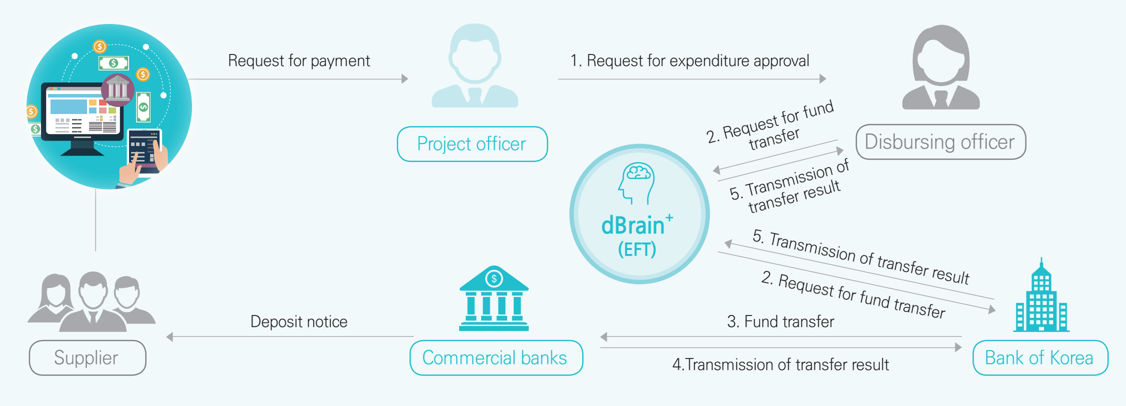
3.1.7 EBPP (Electronic Bill Presentment and Payment)

EBPP allows financial institutions to inquire and receive billing information in real time, and taxpayers to conveniently pay taxes through various channels such as the Internet, smartphone banking, and automated devices. At the same time, commercial banks inquire and receive bill information from the electronic bill payment (EBPP) system and transmit the results to dBrain+ in real time.



3.1.8 EFT (Electronic Funds Transfer)

The EFT system is electronically connected to the Bank of Korea and commercial banks to transfer national treasury funds to creditors' accounts, check balances, and conduct monthly account reconciliation in real time.



3.1.9 Asset Management

Assets referring to state-owned property and commodities are managed comprehensively through their entire life cycle, from acquisition to disposal which requires transfer of ownership, bookkeeping, and closing of ledger accounts.

Definition of state-owned property

- State-owned property in a broad sense
  - · All property owned by the state for the fulfillment of state purposes.
- State-owned property in a narrow sense
  - · Property that is owned by the state due to the state's responsibility, through contributed acceptance, or in accordance with law or treaty, and subject to the State Property Act (Article 5)
  - ※ Land, buildings, trees, workpieces, machinery, ships and aircraft, securities, and intangible property.

Definition of commodities

- Commodities
  - · Movable property owned or retained for use by the state
  - ※ Movable property (cash, securities) managed under the Management of the National Funds Act, and ships and aircraft administered under the Korean National Property Act are not included.

Tasks	Details				
Comprehensive planning	Each ministry/agency making a plan for management and disposal →	Comprehensive adjustment →	Establishing a comprehensive (draft) plan for state-owned property →	Deliberation and approval	
Management	Acquisition: Purchase, Exchange, New construction/ expansion, Contributed acceptance	Disposal: Sale, Trust, Concession, Destruction/ loss and damage	Transition: Approval for use, End of use, Management transition, Use rescission		
Operation	Permission to use	Loan	Indemnity	Entrustment of management	Repair
Register management	State-owned property register	Commodities register	Map service (GIS)	Portal of "e-Narajaesan", Korea property information system (Internet network)	
Closing	Closure of state-owned property	Closure of commodities	Audit by Board of Audit and Inspection	Submission to National Assembly	

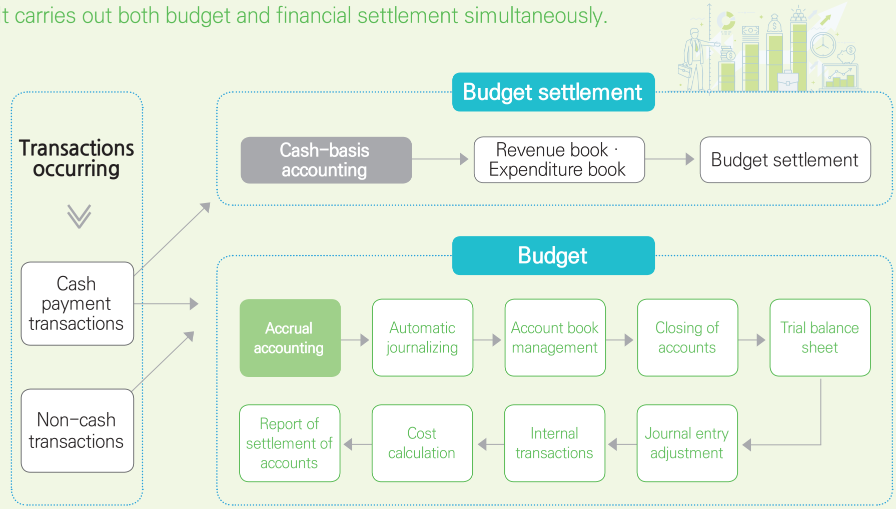
3.1.10 Settlement Management

Based on the National Finance Act and the National Accounting Act, account settlement aids in fulfilling settlement duties (budget settlement, financial settlement) and preparing a report of account settlement for the state in accordance with the settlement procedures and reporting forms outlined in the "Guidelines for the Report on the Settlement of Accounts".
Budget settlement involves determining the revenue (income) and expenditure (spending) for a fiscal year and preparing a report on revenue and expenditure settlement. This process includes closing out total revenue and total expenditure.
Financial settlement involves preparing financial statements that identify the status of national finance and operation performance using accrual/double-entry accounting. The process includes automatic journalizing, settlement adjustment, elimination of internal transactions, and cost calculation, among other tasks.

**Account settlement management performs account settlement tasks in accordance with the Guidelines for the Report on Account Settlements.
It generates the state account settlement report and prepares a report on it.**

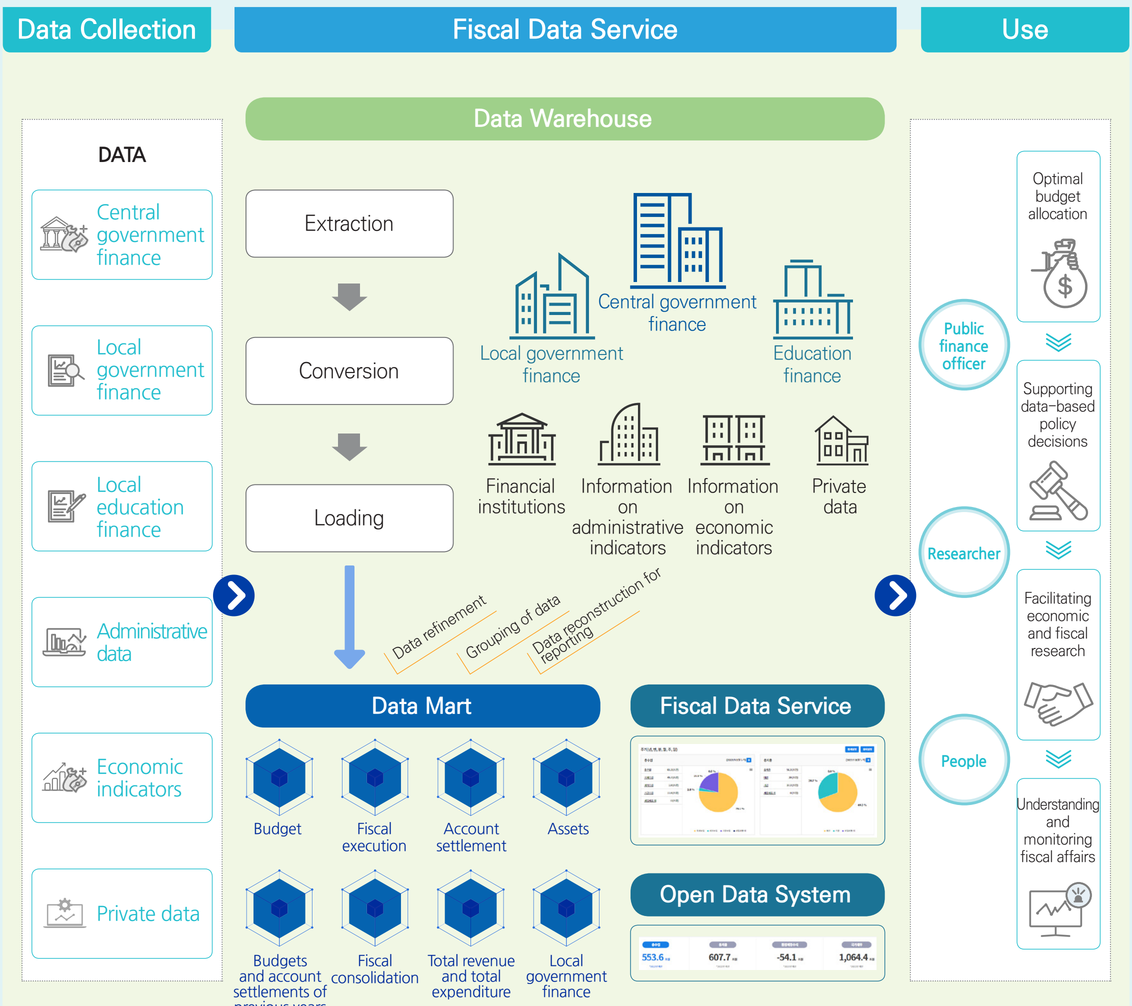
Definition of account settlement

- Account settlement entails real-time accounting of transaction data generated from financial operations and preparing a report on the settlement of accounts based on accounting ledgers and records of revenues and expenses.
- It carries out both budget and financial settlement simultaneously.



3.1.11 Fiscal Data System

The Fiscal Data System provides a service that enables users to gain a better understanding of data related to a wide variety of policy situations, including fiscal, economic, and social domains. This service helps users make strategic decisions by providing rigorous fiscal information analysis, data-driven policy diagnosis, and forecasts when formulating fiscal policies.



3.1.12 Open Fiscal Data

Open Fiscal Data is a web portal that provides easy access to government fiscal data. It presents various features that assist users in understanding and using fiscal data. These features include "Easy-to-understand Public Finance", which delivers fiscal information via card news, videos, and webtoons in an easy-to-understand format. "Fiscal Statistics" enables users to compare and analyze fiscal data such as revenue, expenditure, and fiscal balance data, from various perspectives. "Fiscal Information for All" provides details on benefit services, participatory budgeting, government procurement projects, and more." Fiscal Research and Analysis" provides in-depth fiscal statistics and indicators. Lastly, "Notice Board" functions as a communication channel, featuring menus such as Notices and Q&A.

※URL: openfiscaldata.go.kr/op/en/index

Easy-to-understand Public Finance
- National finance overview
- Public finance management
- Public finance classroom
- Public finance commentary

Fiscal Statistics
- Fiscal revenue
- Fiscal expenditure
- Fiscal balance
- National debt

Fiscal Information for All
- Benefit services
- Participatory budget
- Participatory government procurement project

Fiscal Research and Analysis
- Fiscal projects
- Performance management
- Detailed fiscal statistics
- Economic statistical indicators
- International comparison statistics
- Publishing data
- Fiscal data center

Notice Board
- Notices
- Update information
- Frequently asked questions
- Press release of the Ministry of Economy and Finance
- Online monitoring group
- Public finance related sites
- Institutional data registration
- Surveys

3.1.13 Benefits

Benefits that dBrain+ is expected to bring

❶ Supporting overall fiscal activities

All the financial processes of the central government, including budget formulation execution, fund management, state-owned property and commodities management, receivables and payables management, and account settlement, are handled within this single system.

❷ Undergirding fiscal innovation

dBrain+ is built on the program budget system to support fiscal innovations such as the establishment of the public finance management plan, the top-down budgeting system, and the performance management budget system.

It adopts double-entry book keeping and accrual-based accounting to manage funds, assets, and liabilities in an interconnected manner and precisely compute fiscal data of the country's finances.

❸ Real-time fiscal management

It is configured to digitize the entire process of receipt and disbursement of fiscal funds and to provide users with real-time updates on the fiscal management status.

❹ Generating statistical analysis of fiscal data

Through statistical analysis of various sectors, departments, and functions, this system provides precise statistical analysis data on past performance, current status, and forecasts. It assists the government in making well-informed policy decisions and provides detailed, transparent fiscal information to the public.

Satisfaction by national financial actors

For people

· They can easily access transparent information about fiscal matters such as budget size, execution performance, and performance evaluation results. This allows for increased public oversight and participation in national finance.

· In the end, government project performance improves, resource waste is minimized, and taxpayers' money is saved.

For National Assembly

· Budgets and account settlements are executed with programs at the center, which serve as units for policy and performance management. This simplifies deliberations and resolutions on budgets and account settlements by the National Assembly.

· It also facilitates the analysis of the performing department, project details, budget, and performance per governmental policy implementation. and taxpayers' money is saved.

For government ministries and agencies

· They can efficiently and easily carry out national finance management planning, budgeting, financial execution, and account settlement.

· By managing the project life cycle, it becomes easier to track and manage project progress. This enhances the accountability of the ministry officers responsible for the project and leads to better project performance.

For fiscal authorities

· They can make well-informed decisions about budget formulation by analyzing the preliminary feasibility, execution, and performance data related to the project.

· They can also enhance their capability to evaluate, analyze, and forecast fiscal operations, and manage fiscal risks more systematically.

Fiscal Statistics of dBrain+

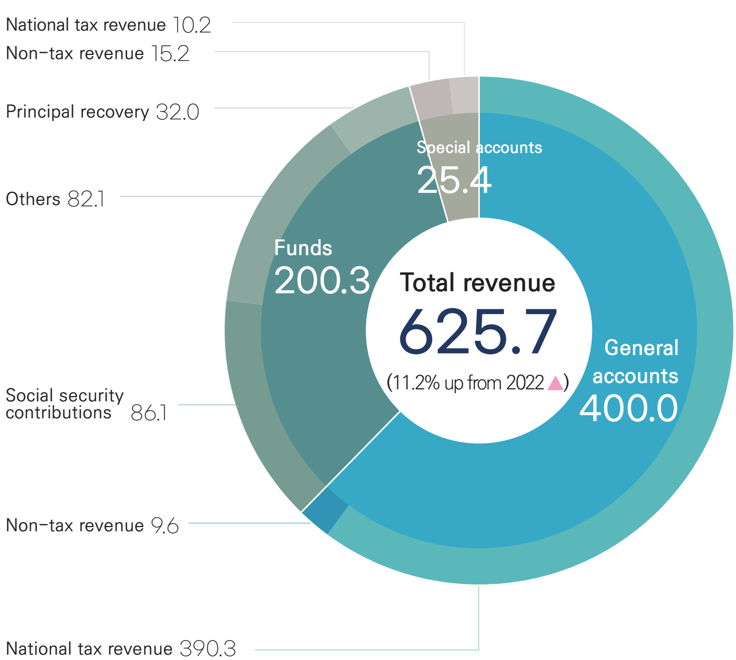
03 3.2 Key Fiscal Statistics of dBrain+

Total Revenue

Total revenue 625.7 trillion won
Income tax 131.9(21.1%)
Corporate tax 105.0(16.8%)
Value Added Tax (VAT) 83.2(13.3%)

Tax-to-GDP ratio 20.7%
OECD average (as of 2020) 24.3%

Tax and social contribution-to-GDP ratio 28.6%
OECD average (as of 2020) 33.7%



(Unit : trillion won)

National tax revenue	**400.5**
· Income tax	131.9
· Corporate tax	105.0
· Value Added Tax (VAT)	83.2
Non-tax revenue	**24.8**
· Current transfer income	5.7
· Property income	2.6
· Special accounts for corporate operating income	6.9
Fund income	**200.3**
· Social security contributions	86.1
· Principal recovery	32.0
· Others	82.1

※ Based on the 2023 main budget

Fiscal Statistics of dBrain+

Total expenditure

Major accounts

General accounts	350.2 trillion won
Special accounts for transport infrastructure	15.8 trillion won
Special accounts for balanced national development	10.9 trillion won
Special account for improving structures of farming and fishing villages	7.7 trillion won

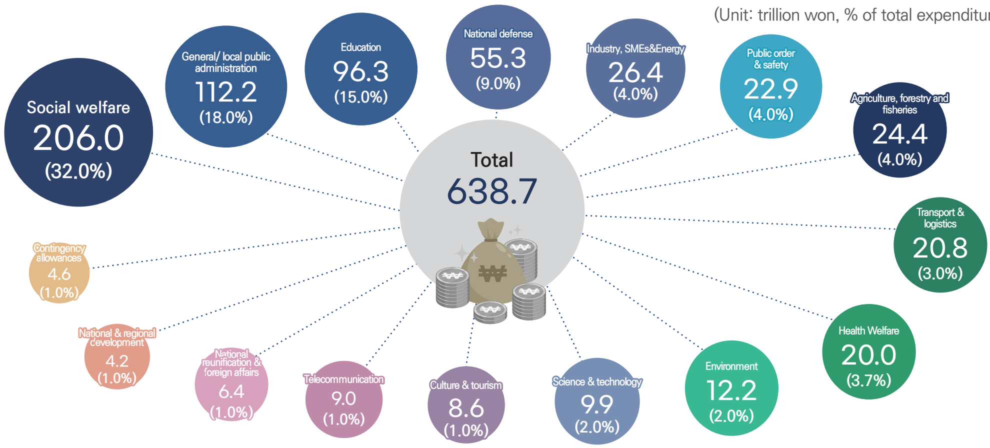
Major funds

National Housing and Urban Fund	35.6 trillion won
National Pension Service	31.5 trillion won
Government Employees Pension Service	22.3 trillion won
Employment Insurance Fund	18.8 trillion won

Major competent authorities

Ministry of Health and Welfare	97.5 trillion won
Ministry of Education	89.6 trillion won
Ministry of the Interior and Safety	70.7 trillion won
Ministry of Land, Infrastructure and Transport	60.8 trillion won

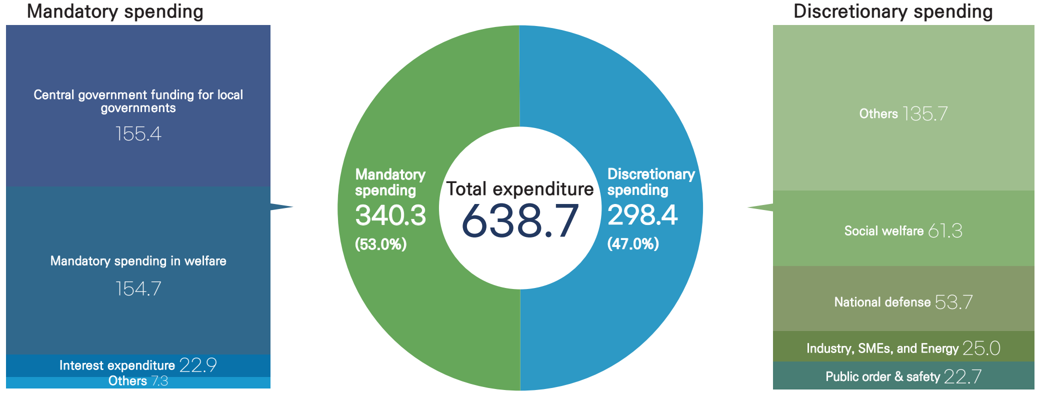
(Unit: trillion won, % of total expenditure)



Mandatory spending

340.3trillion won(53.3% of total expenditure)

(Unit : trillion won, % of total expenditure)



※ Based on the 2023 main budget

Fiscal balance

Component

Fiscal balance

Consolidated fiscal balance

Total revenue **617.8** trillion won − Total Expenditure **682.4** trillion won

= **64.6** trillion won deficit

− Social security fund balance **52.5** trillion won surplus

= Management fiscal balance **117.0** trillion won deficit

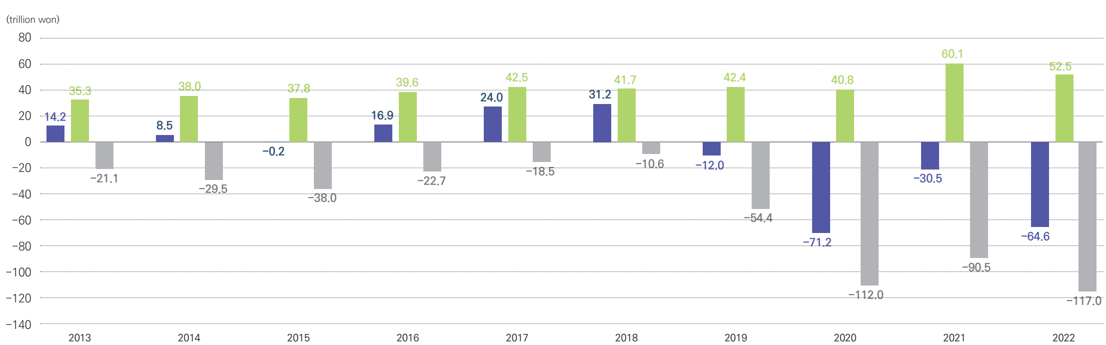
Net budget surplus

Total revenue **573.9** trillion won − Total expenditure **559.7** trillion won − Carry-over amount **5.1** trillion won = Net budget surplus **9.1** trillion won

Trend

Fiscal balance trend: 2013 – 2022

■ Consolidated fiscal balance ■ Social security fund balance ■ Management fiscal balance

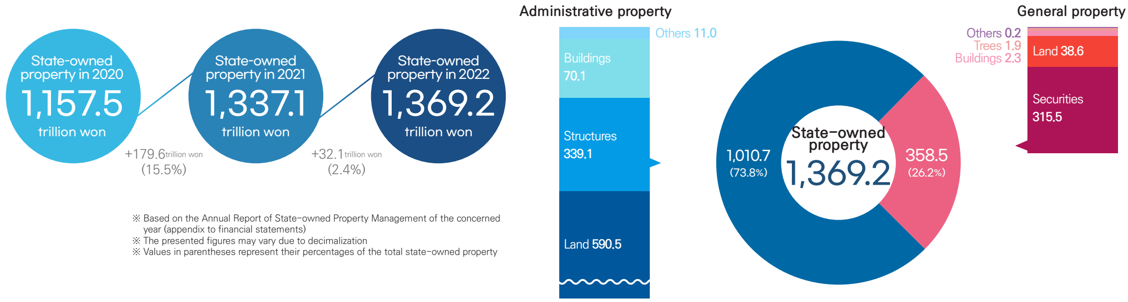


※ Based on account settlement of 2022

Fiscal Statistics of dBrain+

State-owned property

The value of state-owned property in 2022 increased by 32.1 trillion won from 2021 to 1,369.2 trillion won



※ Data: Appendix to the 2021 Financial statements of the Ministry of Economy and Finance, " 2021 Annual Report of State-Owned Property Management"
※ The presented figures may vary due to decimalization.
※ Values in parentheses represent their percentages of the total state-owned property.

Changes in the size of state-owned property

(Unit: trillion won, %)

		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
State-owned property	Amount	912.1	938.5	990.2	1,044.4	1,075.8	1,081.8	1,125.0	1,157.5	1,337.1	1,369.2
	Year-on-year growth rate (%)	2.2	2.9	5.5	5.5	3.0	0.6	4.0	2.9	15.5	2.4
Administrative property	Amount	728.1	741.3	760.4	787.3	799.9	809.5	825.2	858.5	1,000.5	1,010.7
	Year-on-year growth rate (%)	1.1	1.8	2.6	3.5	1.6	1.2	1.9	4.0	16.5	1.0
General property	Amount	184.0	197.2	229.8	257.2	275.9	272.3	299.8	299.0	336.6	358.5
	Year-on-year growth rate (%)	6.9	7.2	16.5	11.9	7.3	-1.3	10.1	-0.3	12.6	6.5

※ Based on the Annual Report of State-Owned Property Management (appendix to financial statements)
※ Such administrative property as roads, rivers, and ports are included in public property since 2011 when the Guidelines for the Valuation of State-Owned Assets were enacted (August 24, 2011).
※ The presented figures may differ due to decimalization

※ Based on the 2022 account settlement

04

dBrain+ for International Cooperation

04

4.1 dBrain+ Roadmap for International Cooperation

Confident in the dBrain+'s key features and capabilities, the Korea Fiscal Information Service (KFIS) is working to export it to other countries. To achieve this goal, we at KFIS foster global cooperation in fiscal informatization. We partner with international financial institutions to provide capacity building programs for public finance officials in developing countries. Furthermore, we offer consulting programs as a follow-up to capacity building programs.

KFIS contributes to the fiscal informatization of the international community by transferring our experiences and expertise in building and operating fiscal systems.

- We share our experience and knowledge through capacity building programs, seminars, and conferences.
- We contribute to international fiscal informatization by consulting on the entire process of building and operating fiscal systems.
- We cooperate with international development finance institutions to promote fiscal informatization in developing countries.

Phase 1

Sharing knowledge assets

Sharing experiences and knowledge through collaborations in capacity building programs (CBP), seminars and conferences

Capacity Building Programs (CBP)

Sharing experiences | **Invitational training program**

Introductory	Intermediate	Advanced
Experience sharing in building fiscal systems (dBrain+, e-Naradoum)	Hands-on, case-based system training	Consulting customized to user countries

Phase 2

Participating in FMIS Informatization

Organizing expert groups for participants to take part in the entire process of consulting, system building, and operations.

Consulting programs	Support for system building and operation
· Feasibility study projects · Information Strategy Planning (ISP) · Knowledgy Sharing Program (KSP)	· Quality management · Operation management · Change management

Partnerships with domestic and international organizations (WB, IDB, ADB, KDI, Export-Import Bank of Korea)

Website
www.fis.kr

Facebook
https://www.facebook.com/kpfis/

Blog
http://blog.naver.com/kpfisnet

We set the standard for digital fiscal management

KFIS goes deeper and broader for fiscal management

Ministry of Economy and Finance

Address Ministry of Economy and Finance, Sejong Goverment Complex, 42, Doum6-ro, Sejong-si, Korea
Website www.moef.go.kr

Korea Fiscal Information Service

Address Metrorower, 10, Toegye-ro, Jung-gu, Seoul, Korea
Website www.fis.kr **Open Fiscal Data** www.openfiscaldata.go.kr