Summary Report on the ASEANSAI Knowledge Sharing Workshop on Water Management Auditing In ASEAN Countries Yogyakarta, Indonesia 18-20 August 2015

Prepared by

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Summary Report on the ASEANSAI Knowledge Sharing

Workshop on Water Management Auditing in ASEAN Countries

Yogyakarta, Indonesia, 18-20 August 2015

1. Background

1.1 The main mandate of the ASEAN Knowledge Sharing Committee (KSC) is to encourage ASEANSAI cooperation, collaboration and continuous improvement through knowledge sharing. The KSC will facilitate knowledge sharing programs among the ASEANSAI member countries by programs implementation and results dissemination. This contribution could strengthen knowledge on public sector audits among ASEAN countries.

1.2 From ASEANSAI KSC work plan 2014-2017, the Office of the Auditor General of Thailand has been honored to be project leader in three clusters, i.e., water (2015), public private partnership (2016), and audit of compliant letter (2017). In 2015, SAI Thailand shared knowledge about auditing water management which focused on three topics as follows (a) research on topics of auditing water management which based on studies from audit reports; (b) audit on flood mitigation which shared auditing experience by OAG and; (c) River of life project which came from lesson learned of parallel auditing of Mekong River. Likewise, we would like to share knowledge about auditing water management from other SAIs which could be strengthen knowledge in this cluster. This workshop was held at Yogyakarta Indonesia during 18-21 August 2015 which Audit Board of the Republic of Indonesia was the host.

1.3 The objective of this workshop is to develop knowledge sharing about auditing management among ASEANSAI member countries through exchange of ideas, experiences, research, and best practices in the field of public sector audit.

1.4 This workshop was consisted of two activities. The first activity which SAI Thailand shared knowledge about auditing water management in three topics, i.e., (a) research on topics of auditing water management; (b) audit on flood mitigation; and (c) river life of project. For the second activity, it was represented to share knowledge about auditing water management from other SAIs.

1.5 As the project leader, we expected that this workshop could be main activity to promote SAIs cooperation, collaboration and continuous improvement through knowledge sharing. Further, we summarized the knowledge sharing report in auditing water management as expected output of this workshop.

1.6 This report is consisted of four parts which discussed the objective of workshop, contents, the best practices, and lesson learns from ASEANSAI members' experiences. For the next part, we start at the contents on the first day (18 Aug 2015) which SAI Thailand, project leader, show their experiences in auditing water management. SAI Thailand shared knowledge about auditing water management which focused on three topics as follows (a) research on topics of auditing water management which based on studies from audit reports; (b) River of life project which came from lesson learned of parallel auditing of Mekong River and; (c) audit on flood mitigation which shared auditing experience in public procurement auditing of SAI Thailand. In part 3, we discussed on the second day (19 Aug 2015) which 8 SAIs represented their experiences in water management auditing. For the last part, we concluded the workshop highlights which we respected SAI Malaysia as a role model to develop auditing water management. However, in the future we could enhance auditing capacities through collaboration in our region.

2. Contents

2.1 For the first day of workshop (18 Aug 2015), we initiated by the opening session which three distinguish keynote speakers gave their valuable speeches. (See Appendix)

2.2 **Mr. Prajuck Boonyoung,** Inspector General 1 of OAG Thailand as the head of delegates of SAI Thailand, gave his speech which pointed out ASEAN region is endowed with abundant freshwater resource; however, it still encounters the scarcity and unbalanced problems in natural resource management especially water resources. Today, freshwater resources are under increasing pressures due to rapidly rising demand from industries activities, agricultural use, and a growing population. These variables affect to the water management which involved supply, demand, water conservation, and water quality management. At present, key global water challenges are categorized in many topics, for example, the availability of safe drink, drought, flooding, and effects of climate change.

2.3 Meanwhile, **Mr. Ir. Md. Wahid bin Mohd Nor**, Director of the Water Management Division of JAN Malaysia delivered his remarkable speech which mentioned to the establishment of water audit division of SAI Malaysia. This establishment could develop and conduct several

water audit training & workshop at our academy. This is to train as many as possible auditors on various water management audit, exposed them to site condition and project management.

2.4 **Mr. Sapto Amal Damandari,** Vice Chairman of BPK**,** gave notable speech especially the role of Supreme Audit Institutions which keep the government accountable in providing citizens with clean water and save living environment by conducting audits on water management. He pointed out that water is an essential element of life is indisputable. Yet, water may become destructive when it is not properly managed. Governments are hold responsible for managing water for the sake of the citizens and the environment. Not only that they must provide and secure supplies of clean water for domestic and industrial usage, but they also are expected to mitigate water-related disasters while preserving the ecosystem and biodiversity. He believed that this forum provides a great opportunity for our auditors to be exposed of others' experiences and best practices in order to enhance their own capacity in conducting water management audits.

Topic 1 Research on topics of auditing water management: Literature review from audit report

2.5 In this workshop, **SAI Thailand** as the project leader commenced at the topic about **Research on topics of auditing water management: Literature review from audit report** which Dr. Sutthi Suntharanurak, lecturer and moderator, discussed four issues as follows; (a) water security and new paradigm of water management: economist's perspective; (b) overview of auditing water issues: various experiences from SAIs; (c) lesson learned from auditing water management of EUROSAI WGEA and ; (d) knowledge sharing of auditing water management from SAI Thailand.

2.6 For the first issue, Dr. Sutthi mentioned to **the water security** as the main issue which water will come from better use and efficiency of current sources of water and from conservation (See definition in Box 1). He explained that nowadays environmental economists analyze the water security under demand and supply sides management. Under demand analysis, the factors of demand for water are related to urbanization, population growth, and improving living standard. Similarly, the factors of supply of water are involved land use, pollution, changing catchment, and climate change (See figure 1).

2.7 In 2004, the Working Group on Environmental Auditing (WGEA) summarized SAIs' collective experiences in auditing water issues, the working group's first central environmental theme. SAIs had conducted more than 350 audits on this topic from 1996 through 2001. The

Netherlands Court of Audit reviewed a large number of these audit reports and produced the paper ***Auditing Water Issues–Experiences of Supreme Audit Institutions.***

Box 1

Water Security

The capacity of a population to safeguard sustainable access to adequate quantities of and acceptable quality water for sustaining livelihoods, human well-being, and socio-economic development, for ensuring protection against water-borne pollution and water-related disasters, and for preserving ecosystems in a climate of peace and political stability."

The definition of UN-Water

www.unwater.org

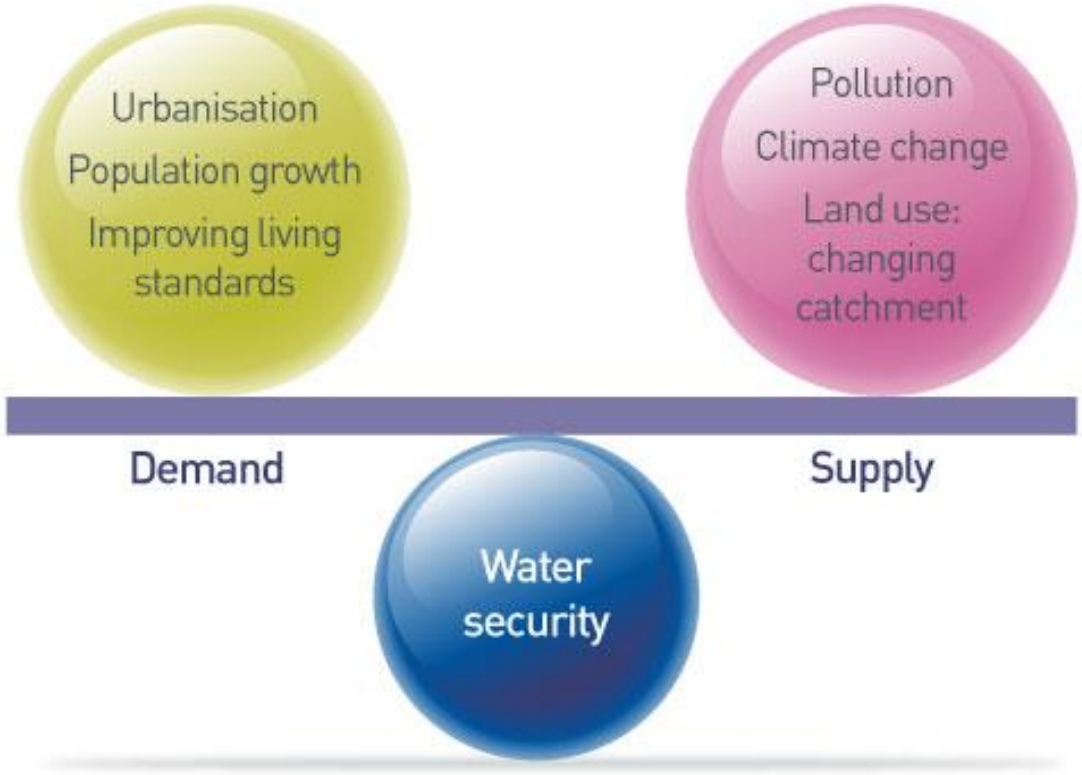


Figure 1 Water Security under Demand & Supply analysis

Source: http://www.amecfw.com

2.8 The Netherlands Court of Audit review of water audit reports revealed that SAIs had chosen a wide variety of topics and approaches in their work. Results of auditing water issues were included in 8 topics as follows; (1) the water quality of rivers and lakes; (2) flood prevention and recovery; (3) the protection of wetlands; (4) the treatment of wastewater and sewage; (5) the supply of drinking water; (6) leakages related to unaccounted for water; (7) the prevention of marine pollution; and (8) the costs of water-related infrastructure work.

2.9 We surveyed the database of INTOSAI WGEA which it categorized four types of environmental auditing, that is, compliance, financial, performance, and priori audits. INTOSAI WGEA clarified main audit objectives in environmental auditing as follows; (a) fair presentation of financial statements and expenditures; (b) compliance with international environmental agreements; (c) compliance with domestic environmental legislation; (d) compliance with domestic environmental policies; (e) performance of government environmental policies and programs; (f) environmental impacts of non-environmental government programs; and (g) evaluate environmental impacts of proposed environmental policies and programs.

2.10 In 2013, INTOSAI WGEA published the report, ***Auditing Water Issues: An Examination of SAIs' Experiences and Methodological Tools They Have Successfully Used***, which developed by US Government Accountability Office or GAO. This report is designed to showcase recent SAI experiences conducting audits in 11 key water issue areas, and to provide insights into the ways in which different audit tools can contribute to successful water-related audits. The report updates and builds upon information presented in the WGEA's 2004 report prepared by the Netherlands Court of Audit. This report highlights the methods used, and the empirical results achieved, from 105 recent water-related audits published by SAIs from 43 countries. It provides an overview of the types of activities SAIs commonly audited in each of the 11 water issue areas and the approaches they took to do so. In addition, it represents an **"Auditor's Toolbox"** which examines the strengths and limitations of different audit methods when conducting water-related audits and, in particular, the circumstances in which SAIs have deemed them to be most useful.

2.11 However, the GAO paper analyzed audit report which is based upon the results of an analysis of 105 recent water-related audits published by SAIs from 43 countries. They developed the audit matrices to highlight noteworthy audits from each of the 11 water issue areas. Audit matrices—also referred to as "design matrices" by many SAIs—are commonly used as a tool to visually present information on the key elements of an audit plan, including details on the audit's objectives, methodology and results (See figure 2).

Objectives / Researchable Question(s)	Audit Criteria, Key Information Required, Source(s) of Information	Scope and Methodology	Challenges Encountered in Conducting the Audit or Reporting its Findings	Audit Results and Key Findings

Figure 2 Audit Matrices which developed by GAO

Source: Steven L. Elstein (2013) in Auditing Water issues: An Examination of SAIs' Experiences and the Methodological Tools They have successfully used

2.12 In GAO report, it classified 11 water issues which are extended from the study of Netherlands Court of Audit (2004). These issues are consisted of availability of safe drinking water, competing demands for limited water supplies, drought, flooding quality of surface waters, marine environment, planning and financing for water infrastructure, implementation and enforcement of water laws, challenges of managing water resources shared by multiple nations, adequacy of water related data, and impacts of climate change on water resources. However, Dr. Sutthi noticed that during ten years impacts of climate change on water resources seem to be interested increasingly.

2.13 The study of GAO (2013) explained the auditor's toolbox which focused on basic audit tools and specialized audit tools. Generally, auditors still familiarize basic audit tools, e.g., interviews, documentary reviews, and site visits. However, GAO suggested that SAIs might implement several specialized audit tools, for example, expert panels, focus group discussion, international benchmarking, economic and scientific analyses.

2.14 Dr. Sutthi gave the interesting case studies from SAIs in ASEAN which their audit reports about water management were appeared in INTOSAI WGEA websites (See figure 3).

Interesting Case Studies from SAIs in ASEAN

SAIs	Title of Audit Reports Which involved auditing management
Indonesia	Audit Report on the Handling of Disaster in Lake (Situ) Management (2010)
	Audit Report on River Pollution Control Performance (2009)
	Audit Report on Performance of the Handling of Flood Disaster in Watershed (2008)
Malaysia	A Study on Management of Non-Revenue Water (2010-2011)
	A Study on Management of Drinking Water Quality (2008)
Thailand	Audit of Coastal Erosion Management and Protection (2008)
Collaborative Audit Between SAIs of Indonesia and Malaysia	Parallel Audit Report on Management of Mangrove Forest in the Strait of Malacca (2011)

Figure 3 Interesting case studies from SAI in ASEAN

Source: INTOSAI WGEA website

2.15 For this workshop, the lecturer represented the best practice of EUROSAI WGEA which show auditing water management (See Box 2). During 2003-2012, there were 105 audit reports which involved auditing water management in European countries. EUROSAI WGEA categorized 11 types of audit which main audit types still consisted of (a) financial audit, (b) compliance audit, and (c) performance audit. However, many audit reports were considered as

comprehensive audit, that is, (e) compliance & performance audits, (f) compliance & performance& priori audits, (g) financial & compliance audits, (h) financial & compliance& performance audits, (i) financial& performance audits, (j) performance & compliance audits, (k) combined audits, and (l) not specified (See figure 4).

Box 2

EUROSAI WGEA

The EUROSAI Working Group on Environmental Auditing (EUROSAI WGEA) was formally established by a resolution of the 4th EUROSAI Congress held in Paris, in 1999. Its vision is to improve the management of natural resources and the environment in each country represented in the working group, and to make Europe a leading region in the area of good natural resources and environmental management in the public sector. EUROSAI WGEA aims to promote a spirit of cooperation based on integrity, open communication, and professional excellence.

Source: EUROSAI WGEA website

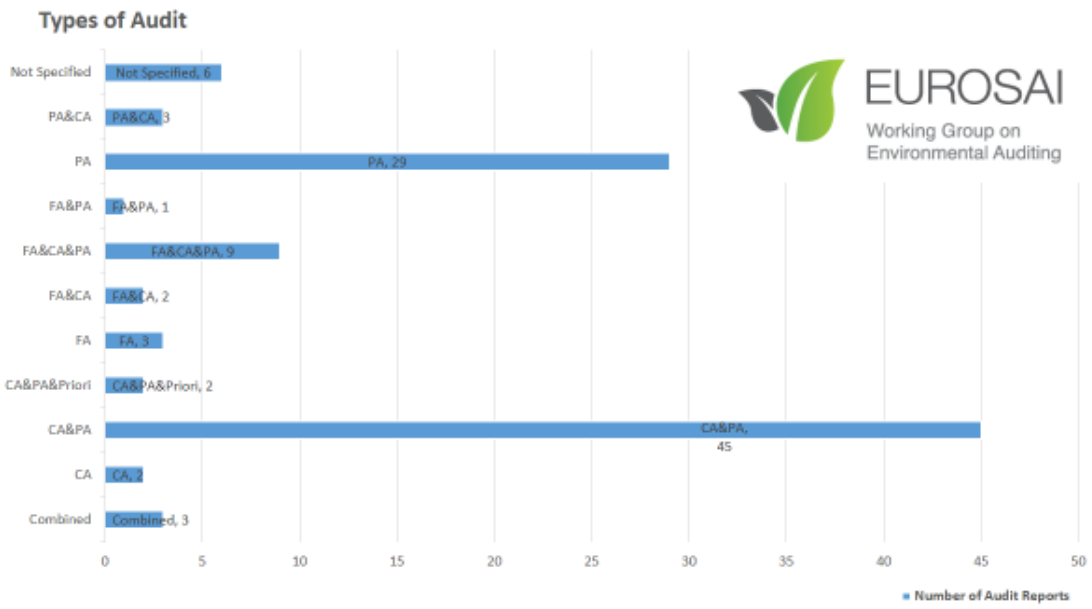


Figure 4 Types of audit in water management in European countries

Source EUROSAI WGEA website

2.16 For Thailand, the project leader explained that during 2005-2015 SAI Thailand published 33 audit reports which involved auditing water management. All reports were conducted by performance audit. However, audit findings were reflected by 3Es principles. SAI Thailand classified these audit reports in 4 categories, i.e., (1) availability of safe drinking water; (2) planning and financing for water infrastructure; (3) flood prevention; and (4) waste water management.

Topic 2 Auditing Water Management in Malaysia

2.17 On the first day, **Mr. Ir. Md. Wahid bin Mohd Nor**, Director of the Water Management Division of JAN Malaysia, gave his valuable lecture about auditing water management in Malaysia. He explained the initiation of water management division which established in 2007. The scope of water management is covered in 5 areas, that is, portable water supply, flood mitigation, waste water, water resources, and shoreline protection. In addition, this division conducts training courses on water management, too. The establishment of water management division could provide technical advice to the auditors and suggestion & recommendation to relevant ministry and department on water management as the best practices.

2.18 For the first area, it is involved the portable water supply which also as known drinking water , industrial purposes and food preparation. The scope of audit studies on potable water supply management are consisted of 8 areas, that is, water quality, non-revenue water (See Box 3), water billing management, rural water supply, school rural water supply, water asset management, water concession agreement, and raw water transfer. In each area, SAI Malaysia clarified common audit findings that they always report in performance audit (See table 1).

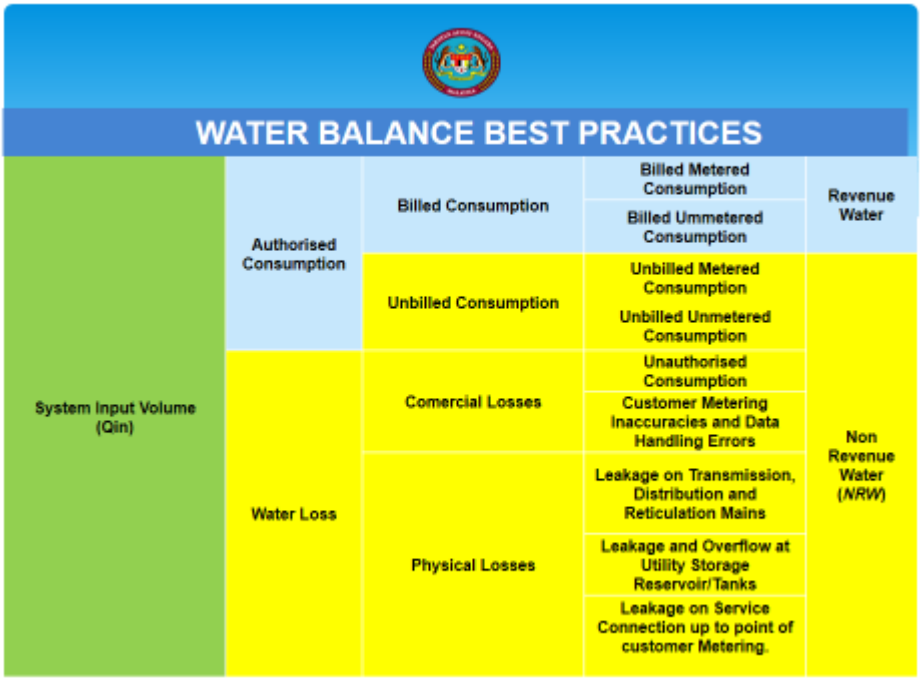
Box 3

Non-Revenue Water

SAI Malaysia is the first SAI which focused on auditing non-revenue water (NRW). This is an audit innovation that became the signature of audit development by SAI Malaysia. The formula of NRW is represented as;

$$\text{Non-Revenue Water (NRW)} = \frac{Q_{in} - Q_{billed}}{Q_{in}}$$

Q_{in} is show the system input volume, meanwhile, Q_{billed} is explained billed consumption volume. However, SAI Malaysia explained the matrix of water balance best practices which show below figure



Source: Power Point Presentation of **Mr. Ir. Md. Wahid bin Mohd Nor**, Director of the Water Management Division of JAN Malaysia

Table 1 Common Audit findings in water management of SAI Malaysia

Areas	Common Audit Findings
Water Quality	**a) Catchment area not gazetted.** o Lack of awareness among the state water authorities. o High cost involved o Fragmentation **b) Deterioration in raw water quality due:** o Urbanization & Development and Industrialization **c) Lack of operation & maintenance at water treatment plant :** o Treatment plant overload o Incompetence staff o Calibration of laboratory equipment o Chemical reagent expired **d) Reservoir /Water Tank** o Deposit of Mud/Sand/Debris o Unscheduled cleaning o Vandalism **e) Distribution system/ reticulation** o Unscheduled cleaning (Flushing) o Frequent pipe burst & leaks o Substandard pipe material **f) Sampling Station** o Vandalism o Lack of numbers vs. norm o Not following standard design **g) Internal plumbing system** o Water tank unscheduled cleaning o Substandard pipe material o Poor workmanship

Areas	Common Audit Findings
Water Quality	h) **Violation on water quality** - Quality Assurance Program (QAP) for the parameter Fluoride, Chlorine and Aluminum Sulphate
Non-Revenue Water (NRW)	**a) Allocated fund not fully channel to address NRW.** o Construction of pump House o Installation raw water flow meter **b) NRW program not closely monitored & control** o Lack of specialized team o District monitoring zone not fully covered o Active leakage control approach not fully establish **c) Holistic approach not fully implemented - the whole water supply activities should be well coordinated;** o Billing o Maintenance work o Customer service **d) NRW master plan should be established first to identified & prioritize in water balance audit** o Unreliable data - Data collection and data verification should be establish. o Production meter **is not** functional, verification, and calibration.
Flooding Mitigation	o Study on master plan is not fully implemented. o Weaknesses in contract management o Non-compliance on specification work o Poor workmanship o Lack of maintenance work during defect liability period o Lack of coordination between departments / agencies o Poor safety measures at project site o Environmental Monitoring Plan (EMP) is not fully implemented.

Areas	Common Audit Findings
Sanitation & Sewerage	**<u>Treatment Process</u>** **a) Violation of effluent discharge due to:** poor maintenance**,** electricity disruption, vandalism**,** and overloaded **b) PE Loading – Overloading / Under loading** o Overloading – STP being overload-increase in population (PE) o Under loading- STP operation much below design capacity due to delay in service connection: connection fee borne by consumer **c) Low Tariff - Revenue collection not able to cover operational cost due to low tariff** o Tariff revision overdue – not revise for a long period o No action been taken to defaulter **<u>Sewerage Treatment Plant (STP) operation & maintenance</u>** **d) Vandalism** **e) Maintenance not properly conduct as per schedule ;** screening debris not clean **f) High cost operation in small Sewerage Treatment Plant (STP)** **<u>Distribution network</u>** **g) Pipe ageing;** Frequent pipe burst – polluted water bodies. Costly to repair and replace new pipe **h) Manhole & pipe blocked** o Blocked due to inappropriate material dump into distribution system (pampers) ; Incurred extra cost in deluding ; Waste water overflow **i) Inefficient Pump house - Interrupted power supply due to lighting and vandalism** **j) New service connection** o Consumer have to borne for a new connection & its costly o Delay in creation a new account – lost in revenue

Areas	Common Audit Findings
Water Resources	**a) Catchment area is not gazetted.** o Lack of awareness among the State water authorities o High cost Involved o Fragmentation **b) Deterioration in water quality ;** Urbanization & Development , Industrialization and Pollution
Shoreline Protection	**a) Constructed structure failed due to:** o Design failure (overtop, structure collapse, o Adopted unsuitable structure **b) Piecemeal approach due to limited funding** **c) Non-compliance to specification**

Source: Power Point Presentation of **Mr. Ir. Md. Wahid bin Mohd Nor**, Director of the Water Management Division of JAN Malaysia

Topic 3 River Life of Project: Lesson learned from parallel auditing of Mekong River

2.19 For the third topic, Mr. Prasopsuk Sungboonmark, the lecturer from SAI Thailand, shared his experience in cooperative environmental auditing Mekong River Basin management (See Box 4). The audit objective is to determine whether the Thai Government has established water resource management system in Mekong River Basin areas in compliance with the framework of Mekong River Committee (MRC)'s Basin Development Plan. The audit entity was the Water Resources Department (the secretariat to the National Water Resources Committee). They used audit methodologies both document reviews and interviews. For document reviews, they reviewed law regulations and agreement, water resources management policy documents, water resources management budgetary documents, and meeting report of committees responsible for water resources management.

2.20 The audit team set up the researchable question whether the Thai Government has established water resource management system in Mekong River Basin areas in compliance with the framework of MRC's Basin Development Plan. They reviewed policy measures regarding to water resources management especially in Mekong Basin areas, water resources management

organizations, and water resources management plans. For their audit findings, they found that some River Basin Organizations in the structure have not actually been appointed. Similarly, the River Basin Organizations did not function properly. In case of water resources management plans, they concluded that very small percentages of projects in The Integrated River Basin Plans have been approved and received the budget.

2.21 The audit team attempted to find cause which the root of the problems is the lack of water management law called **"Water Resources Act".** Nowadays, the Office of the Prime Minister's Regulations on National Water Resources Management B.E.2550 which is just a minor law. It cannot really enforce the water related ministries or departments to work harmoniously.

2.22 SAI Thailand recommended improvement for Thai government through establishing a clear action plan to prepare and draft "the Water Resources Act" for submitting to the parliament and consider this matter as a top priority. During "the Water Resources Act" is still drafting the government has to build on the existing legislation and institutional framework to strengthen the role and capacity of River Basin Committee (RBCs), especially in water resources planning process at both national level and trans boundary level. In addition, the audit team gave recommendation for the Department of Water Resources (as the secretary to the National Water Resources Committee) has to formulate and propose any solutions which enable RBCs at all levels to function in compliance with Office of the Prime Minister's Regulations on National Water Resources Management B.E.2550 as well as the 1995 MRR Agreement (Any RBCs responsible for Mekong Basin areas).

2.23 Finally, Mr. Prasopsuk pointed out that the lesson learn of this audit is to implement the Audit Design Matrix in audit planning process.

Box 4

Cooperative environmental audit on the Mekong River Basin Management

SAI Thailand was presented as the leader of the environmental audit theme which was agreed that GIZ would provide funding and expertise. The environmental audit theme focused on water issues specifically the use of the Mekong River water resources. Based on cooperative environment audit on water issue focusing on Mekong River Basin Management, the objectives are;

1. to enhance the capability of South-East Asia SAIs in conducting environmental audit;
2. to enhance the capability in conducting the cooperative environmental audit;
3. to share knowledge between South-East Asia SAIs;
4. to strengthen the network and the cooperation among South-East Asia SAIs.

The common audit topic is the National Water Management Policy on Mekong River Basin. Meanwhile, the parallel audit topics which 5 SAIs selected them in order to coincide Mekong River as follows;

- SAI Thailand: Mekong River Basin Management
- SAI Lao PDR : Solid Waste Management in Vientiane Municipality
- SAI Vietnam : Water Issues in Mekong Basin in Vietnam
- SAI Myanmar : Erosion Control Management of Mekong River Basin in Myanmar
- SAI Cambodia: Water Policy Management in the Kingdom of Cambodia

SAI Thailand concluded lesson learns as follows;

- To enhance the capacity of 5 SAIs in conducting environmental audit and learning to conduct cooperative audit;
- To strengthen the network and the cooperation among South-East Asia SAIs

However, they viewed this parallel audit topics were so vary. Hence, it caused difficulties to develop the comprehensive audit. In contrast, they pointed out this parallel audit show the lack of a formal agreement, insufficient time for the preparatory meeting, and lack of the preliminary national studies and compile results of previous studies.

Source: Power Point Presentation of Mr. Prasopsuk Sungboonmark, SAI Thailand

Topic 4 Parallel audit on Mekong River Basin Management

2.24 For this topic, **Mrs. Sochenda Keo**, Deputy Director of Audit Department III, SAI Cambodia, shared her valuable experience in parallel audit on Mekong River Basin Management. The audit topic was involved water management policy. The audit entity is the Ministry of Water Resources and Meteorology (MOWRAM). The audit team used compliance audit which audit objectives are to evaluate the existence and completeness of water policy and to examine the implementation of water policy. The audit team set 4 research questions which could be distributed sub-research questions (See table 2).

2.25 The audit team selected audit criteria, that is, law on water resource management, national water resource policy, strategic plan of water resource water management, and other applicable regulations. In audit process, the team collected main audit evidences, for example, approved water policy, strategic plan, implementation program, third party confirmation, minutes of meeting, and study of research reports or documents. Likewise, the audit team utilized several audit methodologies, i.e., data collection, interview, document review, conduct the internal control test, data analysis, sampling test, and risk-based approaches.

2.26 Mrs. Sochenda Keo reflected many limitations of this audit which consisted of unclear responsibility, duplication of duties, lack of documentation, resistance of auditees, lack of cooperation of stakeholders, lack of dissemination program, and low enforcement rate. For audit findings, the audit team report two main audit findings, that is, (1) the delay in preparing supporting regulations for the implementation of National Water Resource Policy (NWRP) in Cambodia, and (2) lacking of procedure in collecting and allocating data on water resource sector. This parallel audit could be concluded the lesson learns in both good points and constraint (See table 3). However, Mrs. Sochenda, the lecturer, recommended that in the future parallel audit needs a single common topic. Meanwhile, it should be advance precise identification of common potential issues. It will be acquired support on subject matter experts (SMEs), environmental audit guidelines, capacity building programs (internal trainings, on the job trainings, workshops, and seminar) and financial assistance. Finally, it should establish a clear communication platform and follow up mechanism on coordination process.

Table 3

Research Questions and Sub-Research Questions in Parallel audit of SAI Cambodia

Research Questions	Sub-Research Questions
Do you have any water policy in place?	▪ Which standards or guidelines or procedures were you based on? ▪ Is there any other alternatives or options of your foundation? ▪ What are the main contents of the water policy?
How do you implement the water policy?	▪ Do you have the budget for implementing the policy? ▪ Have you developed the action plan for enforcing the water policy? ▪ Which agencies are responsible for implementing the water policy?
Have you ever measured your achievements of water policy implementation?	▪ Have you monitored and evaluated on the program implementation? ▪ Do you usually prepare the progress reports? ▪ Do you have the system for updating the water policy? ▪ Have you ever made any modification or amended the water policy? ▪ How the implemented agencies use the budged in implementing the water
Who are the main stakeholders?	▪ Is there any integrated program of all the relevant stakeholders regarding to water policy? ▪ What the benefits of water policy? ▪ Who are the beneficiaries?

Table 4

Lesson Learnt from parallel audit of SAI Cambodia

Good Points	Constraints
▪ Enhance capacity building for SAIs-audit approach and methodologies, knowledge of the field, work of expert etc. ▪ Increase multilateral institution dialogues-topics, experts, experts, and financial support. ▪ Provide information and knowledge sharing platform-reports on topic of regional interest. ▪ Success begins from the start point-the commencement of the environmental audit is not a far reach process, but each SAI could select a simple environmental topic to be audited or even conduct an environmental perspective audit along with normal practice.	▪ The audit topics are comprehensive and some are not directly relevant to the common topic of water management in the Mekong River Basin ▪ Not so clear identification of common potential issues ▪ Limited of human resources, expertise, tools, and land language barrier ▪ Not so clear identification since the beginning of the format and the communication of the joint audit report.

Topic 5: Audit on Flood Mitigation: Sharing Experience from OAG Thailand

2.27 For the second day (19 Aug 2015), Dr. Sutthi shared the topic about audit on flood mitigation which focused on auditing public procurement of flood prevention projects after flood disaster in 2011. He started at the 2011 Thailand flood disaster and flood management in Thailand during the crisis. He explained that after 2011 flood disaster, SAI Thailand has monitored several flood mitigation projects closely. Especially, they focused on auditing in public procurement area which has been risk to be leakages and corruption. Under the Organic Act of State Audit B.E.2542 (1999), SAI Thailand has a mandate to audit public procurement.

2.28 Hence, SAI Thailand shared their experiences in auditing on flood mitigation under auditing public procurement of Department of Water Resources (DWR) which is the main agency in preventing flood. In 2012, Department of Water Resource initiated flood prevention projects after flood disaster which in the short run they improved flood protection systems, for example, dredging canals, flood protection dams. These projects were constructed in area which had been flooding risk.

2.29 Dr. Sutthi pointed out the value and benefit of auditing public procurement which consisted of ensuring accountability and transparency, preventing improper procurement practices and improving upon past procurement performance. Nowadays, SAI Thailand has conducted compliance audit in public procurement. They established ***Procurement and Investigative Office (PIO)*** to serve public procurement audit. The main objective of auditing public procurement is to ensure that the procurement process of goods and services including public works have been conducted the public procurement law & regulations.

2.30 The auditing public procurement of SAI Thailand is consisted of 3 phases, that is, (1) auditing of preparation of procurement plan, (2) auditing of tendering and awarding processes, and (3) audit of contract management. SAI Thailand has focused on public procurement audit under three perspectives as follows: (1) to ensure transparency process, (2) to support competitive public procurement market, and (3) to obtain value for money. For the audit method, the auditor uses documentary review, tendering observation, and site visiting.

2.31 In 2012, Department of Water Resource (DWR) initiated flood prevention projects after flood disaster which in the short run DWR improved flood protection systems, for example, dredging canals, and constructing flood protection dams. The budget of flood prevention projects around the country were 5 billion baht (Approx. 142 Million USD). Auditor General gave audit policy to audit flood prevention projects after flood disaster which DWR constructed these projects in area which had been flooding risk. SAI Thailand would like to ensure that these projects should be transparency and no leakages. Finally, they expected that these project will be obtained their objectives in flood prevention. However, the audit results show excessive project cost, changes in a contract result in a large increase in the cost of goods and services, changes made without adequate information, unwarranted contract extension, complaints about the quality of goods and services received, and inadequate inspections and quality assurance of goods and service received.

2.32 For the last issues, Dr. Sutthi discussed how to implement the audit of disaster risk reduction or ISSAI 5510. Flood mitigation or prevention is involved the management of disasters by governments has evolved to take account of disaster risk reduction issues. Hence, we could implement the approach of auditing disasters which developed by ISSAI especially ISSAI 5510. The purpose of ISSAI 5510 is to assist SAIs in the audit of disaster risk reduction by governments. It can be used both by SAIs and by governments and communities seeking to improve mechanisms, procedures and institutions so as to reduce the risk of exposure of populations and assets to the consequences of disasters. ISSAI 5510 provides guidance and good practice on auditing disaster risk reduction. In part 1, it defines disasters, disaster management and disaster risk reduction and explores the political and operational context of auditing disaster risk reduction. Part2 explores the issues SAIs are faced with when planning or conducting an audit of disaster risk reduction. It draws examples from the experiences of SAIs in auditing disaster risk reduction, gathered by means of surveys and a parallel audit conducted amongst SAIs. For the last part, it proposes an audit program to assist SAIs in auditing disaster risk reduction. For this topic, Dr. Sutthi mentioned to SAI Philippines which is the expert in auditing disaster.

3. Country Paper

3.1 This section represents country papers which 8 SAIs shared their experiences in auditing water management.

3.2 **Mr. Abdul Manap bin Jaapar**, a delegate from SAI Malaysia, show his excellent presentation about audit studies on flood mitigation program. The audit objective is to assess the flood mitigation project management which has been managed effectively and economically to achieve its objectives. From 2003-2014, SAI of Malaysia has conducted more than 20 audit studies on flood mitigation. Common audit findings are: study on master plan not fully implemented, weaknesses in contract management, non-compliance on specification work, poor workmanship, lack of maintenance work during defect liability period, lack of coordination between departments / agencies, poor safety measures at project site, Environmental Monitoring Plan (EMP) not fully implemented. However, SAI Malaysia concluded the lesson learned as follows: (a) auditors must have technical skill and competencies in flood management, (b) collaboration with other agencies that are equipped with advance tools i.e. satellite image to analyse and verified the project data, and (c) flood mitigation project involve numerous agencies. Coordination and communication between these agencies should be address accordingly.

3.3 **Mr. Mohd Jefri Bin Haji Md** Salleh, a delegate from SAI Brunei, presented his country paper which involved the scope audit of water supply in Brunei. Audit is carried out by two divisions within the department namely Ministry and Department 1 and Construction Contracts. All associated activities related to the supply of clean water for the consumption of the public is entrusted to the Department Of Water Services, Public Works Department, one of the department under the Ministry Of Development. However, the audit is focused on checking revenues collected as part of the auditing of the stores and expenditure of the designated government department. In addition, it is covered the audit of the construction of new water production, treatment and distribution infrastructures such as dams, water treatment plants and distribution pipes to cater for the increasing demand of water supply. However, SAI Brunei has not carried out any audit on water management. The audit carried out so far is limited to financial audit and project management audit in relation to the activities of the Water Services Department.

3.4 **Mrs. Sochenda Keo,** a delegate from SAI Cambodia, discussed her country paper which involved the cooperative program on environmental audit. She mentioned to the environmental audit that is not significantly different from normal auditing. Environment audit can encompass all types of audit. Likewise, the concept of sustainable development can be a part of the definition of environment audit. However, she explained the barriers of environmental audit development in SAI Cambodia which consisted of internal and external factors. For internal factors, she pointed out SAI Cambodia still lack of skill or expertise within the SAI, experience in EA, human and financial resources, subject matter expert, and Environment Audit guidelines. Meanwhile, the external factors are still reflected insufficient formulation of government policy, and regulatory framework, insufficient monitoring and reporting systems, non-focal point for environmental data and information gathering. In addition, environment audit issues involved multiple agencies which cause difficulties in identifying bodies which take ownership of critical environmental concerns. Also it is hard to give recommendations to relevant auditees due to the limitation of expertise and experience.

3.5 **Ms. Chansamone Chaihachone**, a delegate of SAI Lao PDR, presented the country paper which mentioned to Mekong River. Initially, Ministry of National Resources and Development is the main agency to develop and manage the water and water resource to archive improve quality of life in Lao PDR. However, The SAO has not got experience on the auditing water managements; due to the SAO is not conducted water management audit before. Currently the SAI Lao is preparing using plan on the water management audit in the future.

3.6 **Ms. Myat Phyu Pyar Kyi,** a delegate from SAI Myanmar, explained audit on water management in Myanmar. At the present, audit on water management is not specifically conducted and audit report is not separately issued. However, government agencies related water resources are included in our SAI's normal audit conducted twice a year. Regarding the performance audit, SAI Myanmar specifically conducted the audit on some projects implemented by the Ministry of Agriculture and Irrigation whether these projects were effective or not. Meanwhile, the audit reports were submitted to the parliament. The water management is conducted by about ten agencies in Myanmar. These agencies are performing the control and

management of water by individual and/or cooperation and collaboration. So, SAI Myanmar intend to conduct the audit on water management specifically in the future.

3.7 **Mr. Hartono Ari Susetyo and Ms. Oktarica Ayoe Sandha,** delegates of SAI Indonesia shared their audit experience on flood disaster management in Bengawan Solo watershed. The purpose of the audit is to assess the effectiveness of the implementation of flood disaster management system in the Bengawan Solo river basin in Central Java and East Java. The audit result indicates that flood in Bengawan Solo river basin was not only caused by persistent heavy rains, but also due to watershed degradation, lack of flood control structures, incomplete river improvement projects, lack of drainage system and flood forecasting and warning systems are yet to be established in the basin. The estimated value of the damage and loss caused by flood compiled by National Development Planning Agency (Bappenas) and processed by a team of experts from the Faculty of Engineering Gajah Mada University estimated at Rp1.612,25 billion, with details of the damage and losses in the region of Central Java Province of Rp427,92 billion and in the East Java province of Rp1.184,33 billion. SAI Indonesia summarized the lesson learns that audit of flood disaster management involves many parties to be examined, among others, central government, local government (provincial and district / city), the Ministry of Public Works, the Ministry of Forestry, Ministry of Social Affairs and Ministry of Finance. It requires a team of audit who have knowledge of various disciplines. The use of technology (GPS and GIS) in the examination will provide convincing evidence of an overview of critical land which poses the risk of floods and flood affected areas. Additionally, experts may strengthen the argument and supporting risk and impact of floods.

3.8 **Ms. Eyren M Yulde**, a delegate of SAI Philippines, show the audit experience about evaluation of the effectiveness of water security. The audit objective is to assess whether the Metropolitan Waterworks and Sewerage System (MWSS) has effectively implemented the mandates prescribed by various laws and specific directives relating to the provision of safe, potable adequate, reliable and affordable water services; and proper protection of the existing water supply facilities such as the tunnels and aqueducts connecting the Angat water reservoir to the main treatment plans and to nearby La-Mesa Dam/Reservoir. The audit team considered the vision and mission as criteria in the assessment and evaluation of the effectiveness of the

water security legacy plan for proper operation and maintenance of waterworks system to ensure an uninterrupted and adequate supply and distribution of potable water for domestic and other purposes. Finally, SAI Philippines concluded the lesson learned that the audit has become instrumental in the enhancement of understanding the MWSS' operations. The audit caused a lot of research works to back up the audit findings with the most relevant internal policies of the MWSS and applicable laws as bases in coming up with the audit conclusion and recommendations. As discussed during the exit conference, the audit recommendations will serve as a guide to the top management in order to delineate the responsibility of implementation to the appropriate agency officer with proper coordination to the local authorities and a monitoring tool as compliance to the recommendations will be strictly monitored by the audit team. The inputs and industry knowledge extended by the MWSS personnel who accompanied the audit team has also been of great help because of the complexity of the engineering aspect of the audit.

3.9 **Mr. Ha Minh Tuan**, a delegate from SAI Vietnam discussed their experience about audit on the National Target Program (NTP) for rural clean water and environmental sanitation in 2013. The objective of this program is to improve the situation of water supply and sanitation, to increase the awareness of people, change behavior and minimize the environment pollution, and to contribute to improve health and living standards of rural people. The audit scope is covered in the management activity, coordination and the implementation of the program, the compliance with legislation, policies and regimes of the government, and the economy, effectiveness and efficiency of management and used of program fund. Initially, the audit team pointed out the good practices which involved specific tasks assigned to each member, guidelines to accelerate the implementation process, and plans for monitoring and improving effectively of the program. However, the NTP still had been limitation that technical standard for rural water supply not been issued. It faced inconsistencies between legislations and regulations. Also it was lack of co-ordination between government agencies on inspection and evaluation. For this paper, the audit team gave valuable recommendations, for example, to rectify the financial management and construction management of program, to select investing areas with priority

for schools without toilets, to issue the regulations of management, operation, and maintenance as soon as possible and to encourage households connect pipe into their family.

4. Conclusion

For the final part, we concluded this knowledge sharing which consisted of content, the best practice, lesson learns from our friends, and looking forward.

4.1 Content

This workshop could be summarized three main content, research on topics of water issues, river of life, and audit flood mitigation. The summarized contents are represented as follows.

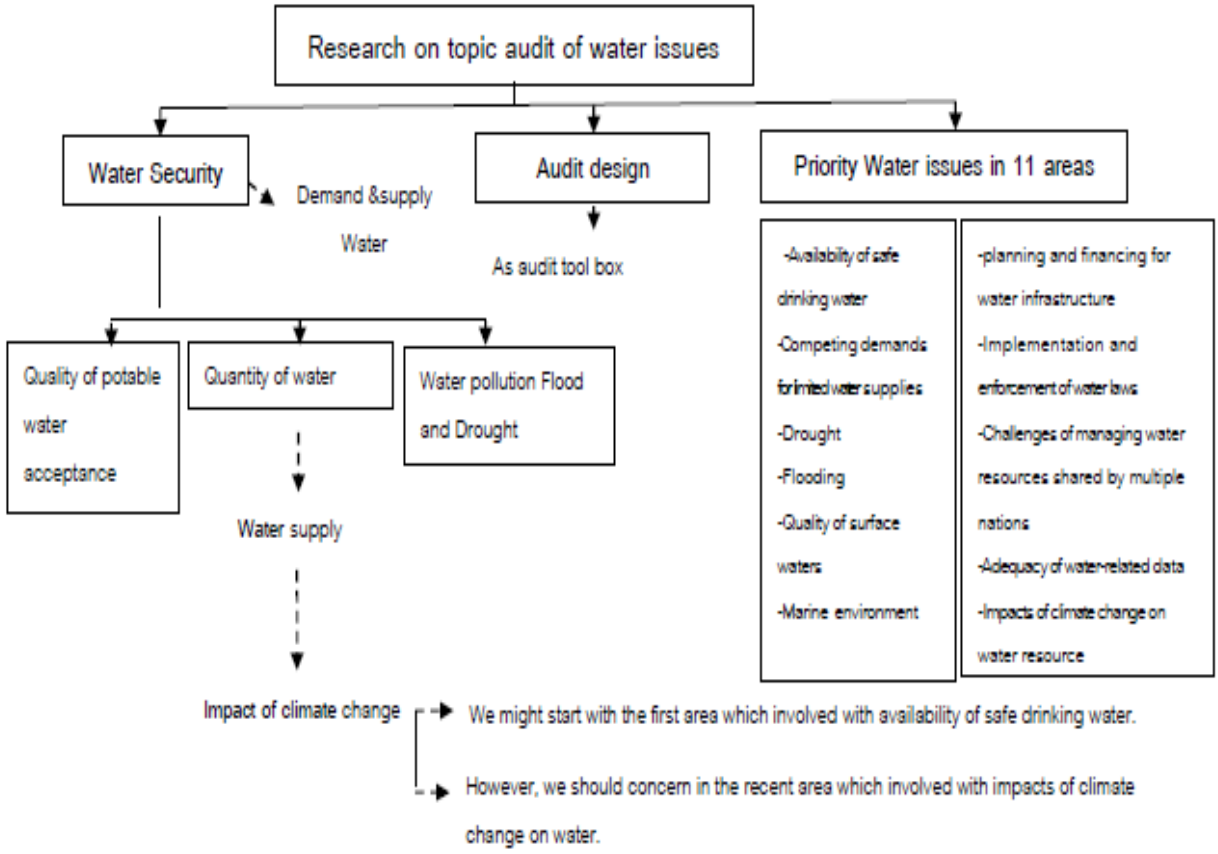


Figure 5 Summary of research on topic audit of water issues

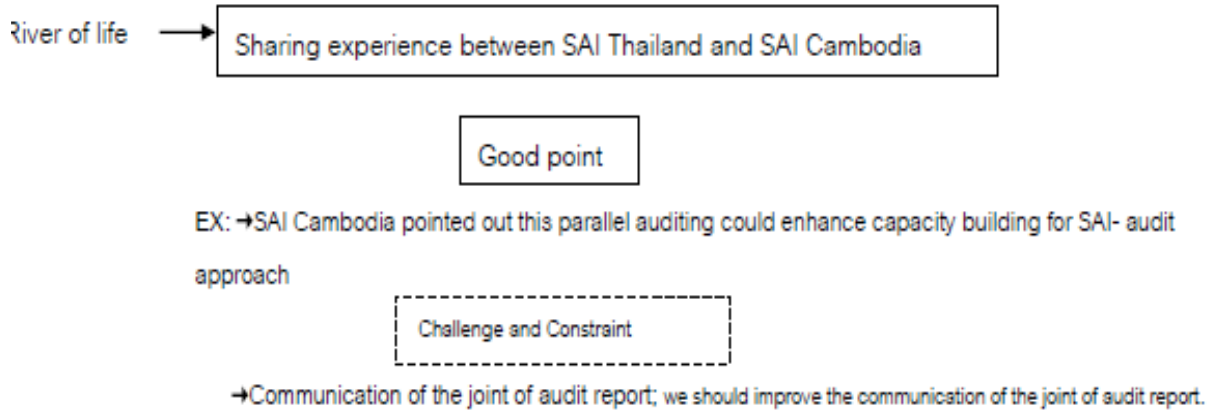


Figure 6 Summary of River of life

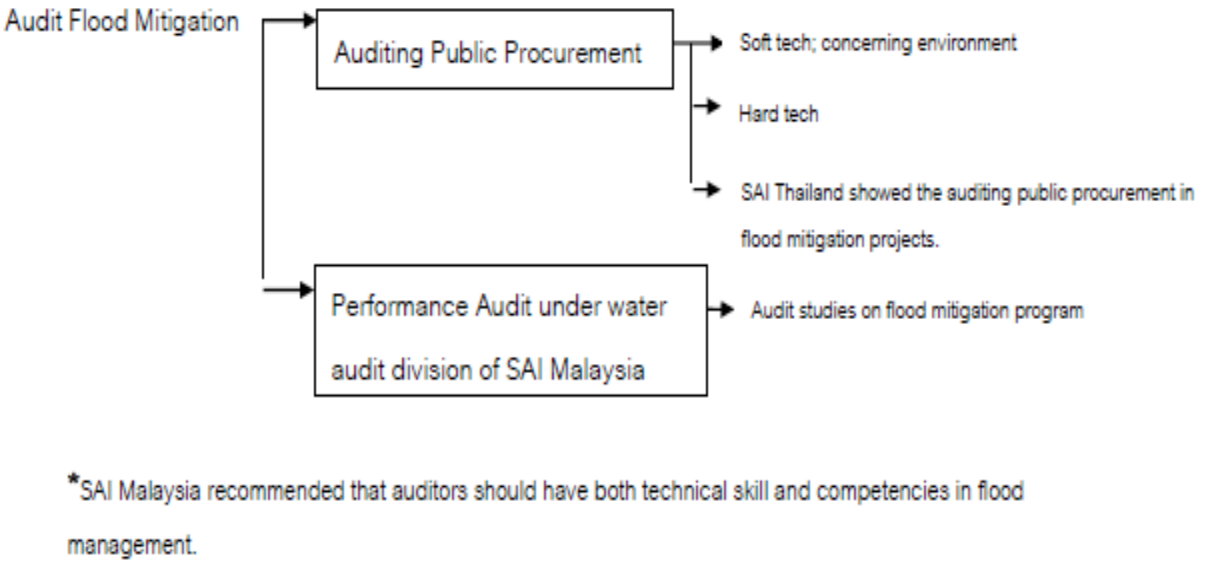


Figure 7 Summary of audit flood mitigation

4.2 The Best Practice

In ASEAN, **SAI Malaysia** show their capacity to represent the best practices of auditing water management. The best practices in auditing water management are consisted of;

・To establish water audit division;

・To set scope of water management;

- Potable water supply management
- Waste water management
- Flood Mitigation Management
- Water resource management
- Shoreline protection management

・To conduct /develop training course on water management, for example, audit non-revenue water;

・ To share common audit findings in auditing water issues, e.g.: auditing flood mitigation, water resource, shoreline protection.

4.3. Lesson learns from our friends

・**SAI Indonesia** show audit results which used the expert to estimate the impact of flood & landslides. Hence, in the future we might employ environmental economists in order to evaluate the impact of flood water or disaster. In addition, we could apply the environmental evaluation for environmental auditing area.

・**SAI Malaysia** suggested that auditor must have technical skills & competencies in flood management. Nowadays, they employ engineer as a specialist in auditing water management.

・**SAI Philippines** could clarify the experience about audit of flood mitigation which related to the auditing of disaster risk (ISSAI 5510) reduction.

4.4 Looking forward

In the future, we could develop our knowledge in water auditing management as follows;

・To prioritize/address water issues under 11 areas of GAO study

・To focus on auditing priority

・To select audit technique by using both basic tools and specialized tools e.g., SAI Indonesia used expert.

・To learn from the best practice especially; SAI Malaysia that we thumb up SAI Malaysia as the best practice in auditing water management. Also, we could implement ISSAI 5510 which related to audit flood mitigation program.

・To conduct the cooperative and parallel audit; Valuable suggestion of SAI Cambodia

・We should always update our knowledge about auditing water management.

Delegates of SAI Thailand

(Project Leader)

Mr. Prajuck Boonyoung	Inspector General 1
Dr. Sutthi Suntharanurak	Auditor, senior professional level
Mr. Prasopsuk Sungboonmark	Auditor, professional level
Mr. Napat Jantatanatip	Auditor, practitioner level
Ms. Surarak Chombhu	Auditor practitioner level

Appendix

AGENDA
WORKSHOP ON WATER MANAGEMENT AUDITING IN ASEAN COUNTRIES
YOGYAKARTA, INDONESIA, 18 - 20 AUGUST 2015

Monday, 17 August 2015	
TBD	Arrival of the Delegates
Tuesday, 18 August 2015	
08.30	**Arrival of the delegates to the meeting venue** Venue: Kencana Room Royal Ambarrukmo Hotel
09.00 – 09.10	**Address by Mr. Prajuck Boonyoung, Inspector General 1 OAG Thailand** Project Leader of Water Management Auditing
09.10 – 09.20	**Remarks by Mr. Ir. Md. Wahid bin Mohd Nor, Director of the Water Management Division, JAN Malaysia** Chair of Knowledge Sharing Committee
09.20 – 09.35	Opening Address by Mr. Sapto Amal Damandari **Vice Chairman of BPK** Host SAI
09.35 – 10.00	Coffee/ Tea Break
10.00 – 12.00	Research on topics of auditing water management: Literature review from audit report **Lecturer: Dr. Sutthi Suntharanurak, Research and Development Office, OAG Thailand**
12.00 – 13.00	Lunch break
13.00 – 14.00	Lecture on topics of auditing water management **Lecturer: Mr. Ir. Md. Wahid bin Mohd Nor, Director of the Water Management Division, JAN Malaysia**
14.00 – 15.00	River Life of Project : Lesson learned from parallel auditing of Mekong River **Lecturer: Mr. Prasopsuk Sungboonmark, OAG Thailand**
15.00 – 15.15	Coffee/ Tea Break
15.15 - 15.45	River Life of Project : Lesson learned from parallel auditing of Mekong River **Speaker: Mrs. Sochenda Keo, Deputy Director of Audit Department III, NAA Cambodia**
15.45 – 16.30	Summary from Moderator, **Dr. Sutthi Suntharanurak, Research and Development Office, OAG Thailand**

Wednesday, 19 August 2015	
08.30 – 09.30	**Audit on Flood Mitigation : Sharing Experience from OAG Thailand** **Lecturer: Dr. Sutthi Suntharanurak, Research and Development Office, OAG Thailand**
09.30 – 09.45	Coffee/ Tea Break
09.45 – 10.45	**Audit on Flood Mitigation : Sharing Experience from JAN Malaysia** **Lecturer: Mr. Abdul Manap bin Japaar, Principle Auditor JAN Malaysia**
10.45 – 11.15	**Presentation of Country paper on auditing water management in ASEAN countries** **Speaker: Jabatan Audit Brunei Darussalam**
11.15 – 11.45	**Presentation of Country paper on auditing water management in ASEAN countries** **Speaker: NAA Cambodia**
11.45 – 13.00	Lunch break
13.00 – 13.30	**Presentation of Country paper on auditing water management in ASEAN countries** **Speaker: SAO of Lao PDR**
13.30 – 14.00	**Presentation of Country paper on auditing water management in ASEAN countries** **Speaker: OAG Myanmar**
14.00 – 14.30	**Presentation of Country paper on auditing water management in ASEAN countries** **Speaker: BPK**
14.30 – 15.00	**Presentation of Country paper on auditing water management in ASEAN countries** **Speaker: COA Philippines**
15.00 – 15.30	**Coffee/ Tea Break**
15.30 – 16.00	**Presentation of Country paper on auditing water management in ASEAN countries** **Speaker: State Audit of Vietnam**
16.00 – 16.30	Summary by Moderator, **Dr. Sutthi Suntharanurak, Research and Development Office, OAG Thailand**
16.30 – 17.00	**Evaluation Survey** By. Mr. Napat and Ms.Surarak from OAG Thailand
17.00	**Closing** **Principal Director of Research and Development of BPK**
19.00	**Official Dinner**

	Venue: Gadri Resto
Thursday 20 August 2015	
09.00 – TBD	Social Program - Visiting Candi Bororbudur - Shopping in Malioboro
Friday, 21 August 2015	
TBD	Departure of delegates

Speech for Welcoming Address

By Mr. Prajuck Boonyoung

Inspector General 1 of Office of the Auditor General of Thailand

Your Excellencies, Mr.Sapto Amal Damardari- Vice Chairman of the Audit Board of the Republic of Indonesia, Mr. Ir Md. Wahid bin Mohd Nor- Director of Water Management Division of National Audit Department of Malaysia - Representative Chair of the ASEANSAI Knowledge Sharing Committee and Distinguish Participants;

On behalf of the Office of the Auditor General of Thailand, it is my pleasure to be with you today and welcome to the workshop on water management auditing in ASEAN countries. For this workshop, OAG Thailand has been honored to be project leader which we will share our knowledge and experience about auditing water management. Likewise, we would like to discuss and learn valuable experiences from other SAIs which could be strengthen knowledge in this cluster.

Ladies and Gentlemen,

Nowadays, the ASEAN region is generally sufficient in natural resources to support the livelihood of our people. Our region is blessed with a variety of unique ecosystems such as the Mekong River Basin, Ha Long Bay, Straits of Malacca and Lake Toba. Our region has a long coastline which measured almost two hundred thousand kilometers, and is surrounded by major seas and gulfs such as the South China Sea, the Andaman Sea and the Gulf of Thailand.

Likewise, ASEAN region is also endowed with abundant freshwater resources. The website of ASEAN Cooperation Environment reported that our region had a total capacity of more than five thousand billion cubic meters of internal renewable water resources, with Brunei Darussalam, Lao PDR and Malaysia having the highest per capita water resource availability.

However, our region still encounters the scarcity and unbalanced problems in natural resource management especially water resources. Today, freshwater resources are under increasing pressures due to rapidly rising demand from industries activities, agricultural use, and

a growing population. These variables affect to the water management which involved supply, demand, water conservation, and water quality management.

At present, key global water challenges are categorized in eleven topics, that is, (1) availability of safe drink; (2) competing demands for limited water supplies; (3) drought; (4) flooding; (5) quality of rivers, lakes, and other surface water; (6) marine environment; (7) planning and financing for drinking water and waste water for infrastructures; (8) implementation and enforce of water laws; (9) challenges of managing water resources shared by multiple nations; (10) adequacy of water-related data; and (11) impact of climate change on water resources.

Distinguish Participants,

Our governments attempt to solve these challenges by taking a wide variety of actions which spend a huge of budget to mitigate and prevent these problems. Meanwhile, our SAIs could play an important role in auditing water management. SAIs around the world have focused progressively on this issue in their audit works. Furthermore, INTOSAI Working Group Environmental Audit (WGEA) has collected and updated database of audit reports around the world which involved auditing water management.

For our best practices in ASEANSAI, I appreciate the cooperation between SAI Indonesia and SAI Malaysia which in 2011 they initiated the parallel audit on management forest in the Straits of Malacca. This audit report was included in the paper of INTOSAI WGEA about auditing water issues which published in 2013. After that, five SAIs in ASEAN, that is, Cambodia, Lao PDR, Myanmar, Thailand, and Vietnam, also SAI China corroborated in the cooperative environment audit on water issue which focused on Mekong River Basin Management. These activities were more successful under our good collaboration and respected friendship.

Ladies and Gentlemen,

Finally, I hope that our workshop on water management auditing in ASEAN countries will be achieved objectives that we will develop and share our idea, knowledge, experiences, research and the best practices.

Welcome to the workshop!

Remarks by JAN Malaysia
Chair of the knowledge sharing committee

Bismillahirrahmanirrahim

Assalamualaikum Warahmatullahi Wabarakatuh and a very good morning

Bapak Sapto Amal Damandari
Vice-Chairman of BPK,

Mr. Prajact Bun Yang
The First Inspector General of OAG Thailand

Bapak Parna
Head of Yogyakarta Regional Office

Distinguished guests

Ladies and Gentlemen

It is indeed a great pleasure for me to deliver these remarks on behalf of Auditor General Malaysia who is also the chair of the knowledge sharing committee. The Auditor General of Malaysia, Mr Ambrin Buang conveys his warm regard to all of you and wishes a successful workshop.

I would like to record my deep appreciation to Bapak Sapto Amal Damandari and the team from Board of Audit of Republic of Indonesia for hosting this meeting and rendering a great hospitality to all of us in these historical city of Yogyakarta, Indonesia. My sincere gratitude to SAI of Thailand for leading the Water Management Knowledge Sharing Project.

Water management knowledge sharing project is relevant because this is a topic of universal concern. Water supply management is very important for human needs, be it for potable water supply, i.e. for drinking purposes, toilet usage, industrial – manufacturing, goods and agriculture.

Raw water that is available in this earth is very limited only 3% and the rest is salt water from the sea. For that, it is paramount important to preserve water resources from being polluted and wasted.

ASEAN region is experiencing in terms of rapid urbanisation, economic growth, industrialisation and extensive agricultural development which are accompanied by the intensive use of water resources, creating pressure on aquatic ecosystems and affecting the region's capacity to meet its water needs.

The ecological carrying capacity of the region is increasingly affected by the deteriorating water quality of water bodies. Of all wastewater generated in the region, only 15-20% receives some level of treatments before discharged into water resources; the remainder is discharged with its full load of pollution and toxic compounds.

Domestic sewerage is of concern, as it affects ecosystems close to densely populated areas. The total volume of wastewater produced in urban area is estimated at 150-250 million m3 per day. This wastewater is either discharged directly into open water bodies or leaches into subsoil. In addition, most industries in the region continue to generate water pollution, as enforcement of relevant regulations lags behind.

Even relatively water-rich countries of the region, such as Malaysia and Indonesia now face water supply and quality constraints in their major cities because of population growth, growing water consumption, environmental degradation, damaging agricultural activities, poor management of water catchment areas, industrialisation and groundwater overuse.

For the potable water supply, quantity and quality of water should be given top priority. Demand for water management in relation of water quantity reserve and development new source, recycle of wastewater and rain water harvesting should be explored further. Non-revenue water is another aspect of water management. Lack of knowledge and understanding in the Asean countries on this subject matter result in ever increasing of water loss.

Water quality monitoring be it raw water and treated water and its compliance to standard is another important area that we should focus too. The cost of treating potable water supply can

be relatively reduce if the quality of raw water is preserve and better class of water quality index namely Class II.

Flood mitigation management is another area of water management that we all must include in the audit studies. Loss of life and properties worth billions of dollars yearly can be reduced and avoided if flood management and mitigation is given a top priority. In fact, audit studies and its recommendations can be channelled to the relevant authorities to be considered and implemented for further improvement.

In the context of SAI of Malaysia, we have conducted special studies on RM4 billion River of Life Program focussing on three aspects: river cleaning, beautification and land development. Significant findings that we have observed are pertaining; on raw water quality index improvement, coordination between relevant authorities, land acquisition due to squatters.

Since the establishment of water audit division in 2007, we have conducted several water audit training & workshop at our academy. This is to train as many as possible auditors on various water management audit, exposed them to site condition and project management. We have also conducted knowledge sharing seminar on Non-Revenue Water studies in September 2012 in Penang.

I would like to take this opportunity to suggest that we could continue the knowledge sharing programs thru parallel audit on topics such as potable water quality, flood mitigation and non-revenue water in Asean countries. We hope that through these programs, ASEANSAI would come up with a common standard on specific on water management audit such as Water Quality Standard and Non-Revenue Water Standard.

Since government had spent/invest huge capital expenditure (CAPEX) in water infrastructure in the past and future, the auditors must be capable to carry out auditing in water management. Thus, they must be equipped with knowledge and competency in water management.

Again, I would re iterate my special thanks to SAI Indonesia and SAI of Thailand for successfully organizing this workshop. Thank you very much for your kind attention.

THE AUDIT BOARD

THE REPUBLIC OF INDONESIA

OPENING SPEECH OF VICE CHAIRMAN OF BPK

WORKSHOP ON WATER MANAGEMENT AUDITING IN ASEAN COUNTRIES

18 AUGUST 2015 IN YOGYAKARTA, INDONESIA

Honorable Mr. Insinyur Muhammad Wahid bin Muhammad Nor, Director of The Water Management Division of Jabatan Audit Negara Malaysia as The Chair of ASEANSAI Knowledge Sharing Committee,

Honorable Mr. Prajuck Boonyoung (Baca: Prajuk Bun-yang), The First Inspector General of The Office of Auditor General of Thailand as The Project Leader of Water Management Auditing,

Respected delegates from ASEANSAI members, and BPK colleagues,

Ladies and gentlemen,

***Assalamu'alaikum Warahmatullahi Wabarakatuh*,**

Peace be upon us,

Good morning, selamat pagi.

Let us thank God the Almighty for giving us the opportunity to gather here today in Yogyakarta, Indonesia for the ASEANSAI Workshop on Water Management Auditing in ASEAN Countries.

Respected Delegates,

Please allow me to start my address by welcoming each and every one of you to "Jogja Istimewa", literally translated as Jogja Beyond Special[1]. It is truly an honour for the Audit Board

[1] 'Jogja Istimewa' is Yogyakarta's new tourism tagline, replacing 'Jogja Never Ending Asia.' According to the slide presentation made by Team 11 as the creator of the new logo and tagline, *istimewa* can be translated as 'beyond special'. (http://www.slideshare.net/sigitkurniawan923/filosofi-dan-makna-di-balik-logo-baru-jogja-berserta-penerapannya?next_slideshow=1)

of the Republic of Indonesia to host this workshop. For that, I thank the ASEANSAI Knowledge Sharing Committee for giving us this opportunity.

My sincere gratitude goes to SAI Malaysia as Chair of Knowledge Sharing Committee, SAI Thailand as Project Leader of the Water Cluster, and all delegates from the ASEANSAI member countries for your attendance here.

Distinguished Ladies and Gentlemen,

I believe in the power of knowledge sharing. I witness how BPK grows and develops to where we are currently, and I can assure you that all would not be achieved had we not established bilateral and multilateral cooperation with SAIs from many countries, in which knowledge sharing is a major element.

Based on this personal experience, I observe the Knowledge Sharing Committee as one of the most important committees in ASEANSAI solely because it facilitates capacity enhancement through exchange of ideas, experiences, and knowledge sharing among member SAIs. If we keep this up, I am confident that SAIs in the Southeast Asia region will be stronger institutionally and professionally in carrying out our constitutional mandate in auditing public fund and obtaining public trust.

Respected Delegates,

I was very excited when I learnt that BPK is hosting the Workshop on Water Management Auditing. I heard that there will be two other Knowledge Sharing Committee workshops this year: on Computer-Assisted Audit Tools and Audit on Contracts and Procurements. As learning is a never ending process in life, I will encourage BPK's staffs to take part in the planned workshop. I hope your SAIs do, too.

I appreciate SAI Thailand as project leader of today's workshop for their willingness to share their invaluable knowledge and experience in water management auditing. I am sure all of us are very much looking forward to sharing and learning from each other's experience in this topic.

Distinguished Ladies and Gentlemen,

The fact that water is an essential element of life is indisputable. Yet, water may become destructive when it is not properly managed. Governments are hold responsible for managing water for the sake of the citizens and the environment. Not only that they must provide and secure supplies of clean water for domestic and industrial usage, but they also are expected to mitigate water-related disasters while preserving the ecosystem and biodiversity.

As Supreme Audit Institutions, it is our responsibility to keep the government accountable in providing citizens with clean water and save living environment by conducting audits on water management. This forum provides a great opportunity for our auditors to be exposed of others' experiences and best practices in order to enhance their own capacity in conducting water management audits. I hope all participants could benefit from this knowledge sharing forum and further disseminate it to fellow auditors in your own SAIs.

Distinguished Ladies and gentlemen,

Once again, on behalf of BPK, we are grateful to be hosting this workshop and happy to see the enthusiasm and commitment of all Members of ASEANSAI, especially SAI Malaysia, SAI Thailand and the ASEANSAI Secretariat who have worked hand in hand to organize this meeting. Should you have any questions or concerns regarding your stay, please do not hesitate to contact my staff from the Public Relations and International Cooperation Bureau who will ensure the success of the workshop.

Finally, by saying Bismillahirrohmanirrohim, I declare the Workshop on Water Management Auditing in ASEAN Countries in Yogyakarta **officially open**. Thank you.

Wassalamu'alaikum Warahmatullahi wabarakatuh.

BPK RI VICE CHAIRMAN

Sapto Amal Damandari