# IMPROVING AUDIT FUNCTIONS OF SUPREME AUDIT INSTITUTIONS TO PROMOTE SUSTAINABLE DEVELOPMENT

**Sándor Nagy, József Gál & Antal Véha**

*nagys@mk.u-szeged.hu, galj@mk.u-szeged.hu, veha@mk.u-szeged.hu*
*Institute of Economics and Rural Development, Faculty of Engineering, University of Szeged*
*6724 Szeged, Mars tér 7, Hungary*

*Abstract:* In this paper, we demonstrate and analyze the substance of the added value effect of a Supreme Audit Institution (SAI), focusing on sustainable development issues. We intend to answer such questions as: how could a SAI respond to global and local challenges and how it could help government to implement commitments towards sustainability. Finally, we trace a possible way to improve external audit functions both on the state level and at the International Organization of Supreme Audit Institutions (INTOSAI), by using some ideas from network theory.

## Introduction

The concept of sustainable development (SD) has become well-known and generally accepted among policy makers by the Brundtland Report in 1987, which defines sustainable development as "development which meets the needs of the present without compromising the ability of future generations to meet their own needs" (United Nations, 1987). The next, notable stage was the Conference on Environment and Development – often called "The Earth Summit" – in Rio de Janeiro, in 1992, at which the participants committed themselves by signing the Agenda 21, an action plan of the United Nations (UN) related to sustainable development to be implemented globally, nationally and locally by organizations of the UN, governments and major groups in every area in which humans directly affect the environment. The main topics were: social and economic affairs, natural resources management, stakeholders, means of implementation and regional dimensions (UN).

A decade later, the World Summit on Sustainable Development (WSSD) was held in Johannesburg (South Africa), in order to review progress made since 1992 and affirmed UN commitment to "full implementation" of Agenda 21, alongside achievement of the Millennium Development Goals and other international agreements. For this period of time, it became apparent that former patterns of resource utilization, exploitation, the allocation, or the concentration of the inputs increasingly narrow the ability of effective and efficient dicision-making opportunities. From

another aspect, there is a growing - basically - implicit debt, liabilities against future generations: such additional costs of the satisfaction of present needs and wants that do not appear directly today, but they would be necessary for maintaining the level and quality of consumption or the alternative options. In order to sustain the niveau of opportunities for coming generations – considering the bottlenecks: demographic trends, constantly rising input prices, limited arable land and water, they will need presumably more financial resources or any kind of capital; they will have to innovate to increase efficiency of assets or they have to face the pressure of being competiteve. Thus, we can say that sustainability is one of the main motivations for innovation, as Nidumolu concluded (Nidumolu et al., 2009).

The three aforesaid pillars: the social affairs and equality, economic activities and other actions affecting the natural environment and their common intersections as well, now became the most importan strategic factors whose sustainable development incorporated into governmental policy showing its significance. Different countries have different development priorities. While social equity may be very important to some, protection of environment may be the priority for others. The objectives for each country are derived from the WSSD Plan of Implementation (United Nations, 2002b). The outcomes of WSSD are applicable to all nations, because the three pillars are interdependent and mutually reinforcing (United Nations, 2002b). After defining the main goals, the next problem for countries is the effective and efficient realization of them using public funds, because in the public sector there is not enough motivation

for sound financial management, and there is no appropriate level of competitive pressure (Ász, 2010). The supreme audit institutions (SAIs) have the mandate on national level to conduct external audits to serve the society's claim for rational spending of public money. In the following sections, we discuss the audit functions of SAIs in connection with sustainable development and a possible way to improve the impacts of audit findings.

## External audits – the role of Supreme Audit Institutions (SAIs) regarding the Sustainable Development

The WSSD Plan of Implementation states that "good governance within each country… is essential for sustainable development" (United Nations, 2002b). The external auditing of the fulfillment of objectives and the expenditures spent on SD related commitment and processes are the key role of national supreme audit institutions. These organizations predominantly characterized by independence, professionalism, probity but often with different mandates. Through audit activities and extension of SAI's functions the "vital" good governance and the implementation of WSSD commitments could be enforced while contributing the effective and efficient sustainable development.

There are many different ways in which the SAI could audit the implementation of (WSSD) commitments, it basically depend on several steps that all countries need to take for the full implementation, but at the same time, the SAI's audit activity should be very specific to the country's priorities. The SAI has the possibility to conduct an audit on some of these or all of them. In this context, the *first step* is: "Translate WSSD commitments into national commitments". It is an early step for SAI to look at what action has been taken for interpretation and a good opportunity to evaluate whether a country has started to integrate the WSSD outcomes into its national policy (INTOSAI, 2007c, 2010a).

The *second step* is: "Develop delivery mechanism". A country should establish means (delivery mechanisms) to achieve national commitments. These could include for instance effective policies, strategies, action plans, regulations, reporting and accountability mechanisms, working groups, specific projects. An audit focusing on delivery mechanisms assess the extent to which a specific country has set up the structures and systems to enable progress to be planned, coordinated, monitored and reported. The links between WSSD and national sustainability strategy – if it is developed at all- can be detected and characterized.

The *third step* is: "Delivery". Here the SAI evaluates the success of individual policies in achieving the policy objectives related to sustainable development (called delivery). The *final step* is: "Monitoring and feedback". The main audit function is to ascertain whether monitoring processes and feedback systems are appropriate to improve the future outputs of national policies. In the progress of auditing fulfillment of WSSD commitments, the SAI has the following types of audits to apply (INTOSAI, 2007d):

- *financial audits* – usually applied for financial management issues of policies, or auditing externally funded implementation projects or programs.
- *compliance audits* – basically for evaluating the compliance with key commitments in the WSSD Plan of Implementation.
- *performance audits* – assessing the adequacy of delivery mechanisms, the performance of national departments, agencies or the performance in specific WSSD-topic areas.
- *comprehensive audits* – aiming at performance and financial audit objectives in the same time.

In Figure 1, we summarize and synthesize the above discussed processes. With this flow chart, it becomes clear what the essence of the added value of audit activities of a certain SAI is. The question of sustainability and the need for problem solving appear on global and hierarchically lower levels (national, regional, micro). The focus and scope of auditing functions of national supreme auditors are basically related to national actors linked to policy-making, implementation of WSSD commitments or to the use of public funds for achieving the objectives. These acitivies for scrutinizing the four implementaiton steps are derived from the outcomes of WSSD taking into consideration the governmental politics and priorities. It is important for SAI because it has to adapt to the surrounding deterministic milieu by choosing the proper audit method and type in order to create the largest possible positive effect (added value) of its functions in the short and long run. In the short term, it is usually called a "result" and defined as immediate changes arising for direct addressees at the end of their participation in an intervention (e.g. improved quality of wastewater treatment). Impact is the long term effect and it has socio, economic, an environmental consequences, that can be observed after a certain period after the intervention, which may affect either direct addressees of the intervention or indirect addressees falling outside the boundary of the intervention (ECA, 2010). After an extensive and comprehensive review of the literature, we specify the added value effects of national SAIs. After publication of audit findings and the emergence of effects a sound financial management of public money could be realized, which will improve governmental performance by creating a "quasi" competitive pressure on the public sector. It will maintain credibility promoting public trust and finally could intensify competitive and innovative skills both in public and private sector. Due to the above mentioned factors, both sustainability and the quality of life could grow.

To deepen the impact of auditing work, there is a need for cooperation and knowledge sharing among SAIs on a global level, too. In the next section, we discuss the role of the INTOSAI (International Organizationin of Supreme Audit Institutions) in this context.
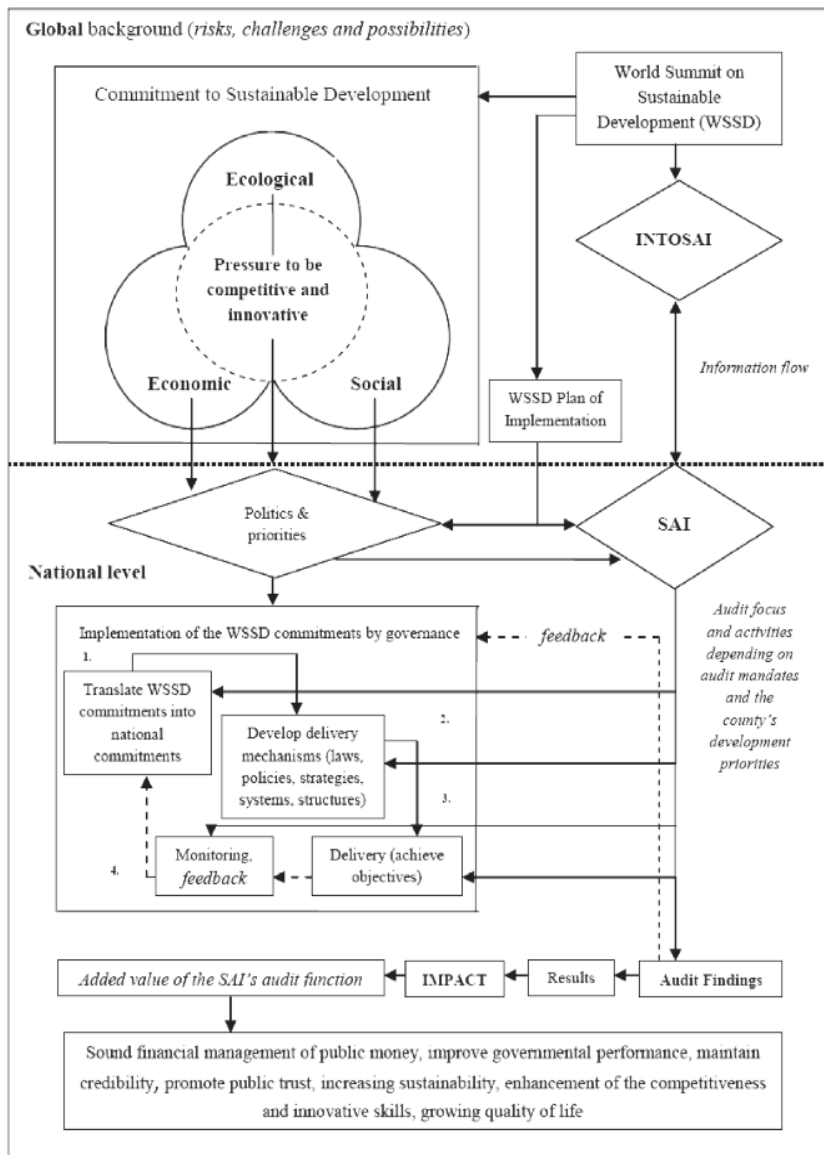
Source: own work based on "An Audit Guide for Supreme Audit Institutions" (INTOSAI, 2007d)

**Figure 1.** The origin of added value of a supreme audit institution in context of sustainable development

## Knowledge sharing among SAIs – network building for deeper audit impact

The International Organisation of Supreme Audit Institutions (INTOSAI) operates as an umbrella organisation providing an institutionalized framework for the external public audit community to promote development and knowledge transfer, improve government auditing worldwide and enhance professional capacities. It was founded in 1953 in Cuba, and presently has 189 full members and 4 associate members. INTOSAI provides a forum for government auditors from around the world to discuss specific issues of mutual concern and keep abreast of the latest developments in auditing and other applicable professional standards and best practices (INTOSAI, 2010b).

INTOSAI recognizes that its strength lies in the cultural, linguistic, and governmental diversity of its global membership and seeks a balanced representation of regions and auditing systems. The INTOSAI's motto reflects this creed: "Mutual Experience Benefits All – *Experientia Mutua Omnibus Prodest* (*lat.*)."

The concept of sustainable development presents new challenges to SAIs and it is likely to pose new methodological and analytical tasks to improve the "scrutinizing" function whether public funds are spent economically and efficiently in compliance with existing rules, regulations and commitments towards sustainability. The INTOSAI has created several committees, working groups and task forces with special missions responding, reacting to global risks, conditions and possibilities to maximize the added value of individual SAIs. The WGEA is an INTOSAI Working Group on Environmental Auditing – formed in 1992 – with specific goals to encourage SAIs to conduct audits on sustainable development issues and projects, help SAIs gain better understanding of specific environmental auditing, facilitate cooperation in order to exchange informations, experiences and best practices among members and publish guidelines and another informative materials (INTOSAI, 2007a, b, c).

The connections and interactions between SAIs and INTOSAI can be interpreted along different dimensions. We evaluate these from the perspective of information flow – focusing on benchmarking best practices, knowledge sharing and knowledge creation on organizational level – on the basis of network theory. If we treat INTOSAI with its relevant stakeholders as a real network with vertices (e.g. a member of working groups, internal, external experts, professionals, colleagues at national level) and links between them (information flow, knowledge transmission), we can boost the added value of audit activity by analyzing the structure of network, increasing the expected quality of interactions and finally by building an effective network regarding knowledge sharing. We define from our point of view effective (real) community/network on the basis of Krebs, as follows (KREBS, 2002): it is sum of vertices and connections based on graph structure and functionally more effective, efficient, more adaptive and productive (e.g. in knowledge creation) than other structures in consequence of advantages derived from synergic effects emerging from adequate interactions and improved, optimized features of connections. Mathematicians, biologists, physicists, management experts and other

scientists have all discovered similarities and identified analogies in effective networks:

– there is a linkage among nodes (vertices) as a consequence of common attributes, goals or governance, there are clusters in the network – similar nodes congregate in groups or flock together

– on the other hand, diversity is very important too: to achieve the desired level of innovation in the network it is needed to maintain connections to diverse nodes and clusters

– robustness of the network: in case of some links or nodes are removed other pathways serve for uninterrupted information flow

– some nodes (vertices) have special functions in the network: they can be hubs, brokers or boundary spanners. Hubs have many direct connections that quickly disperse information, brokers connect the disconnected parts of the network and the boundary spanners connect two or more clusters or communities

– there are very few long paths in the network that lead to delay and distortion of information flow and knowledge transfer (Krebs, 2002).

The *first step* in the progress of creating effective community or network is to observe the present situation from the aspect of a well designed research problem or a special interest. In the case of INTOSAI especially by the Working Group of Environmental Auditing - which is responsible for environmental and somewhat for sustainable development related audits - we must examine the strategic and managerial features, commitments connected to recognition of importance of knowledge sharing and cooperation. Similar to other organizations or companies from a competing sector, the INTOSAI has defined its own individual strategic factors to achieve its desired vision. Below, we list the most relevant declarations: The mission of the organization states that the INTOSAI will foster the exchange of ideas, knowledge and experiences to promote continuous improvement among diverse SAIs. The second strategic goal concerns institutional capacity building. They intend to build the capabilities and professional capacities (human capital) of SAIs through training, technical assistance, information sharing and other capacity building activities. The third strategic goal covers the knowledge sharing, the collaboration and benchmarking.In the frame of conducting best practice studies, WGEA publishes audit guidance materials and performs research on issues of mutual concern. The Communication Policy focuses on the benefits of the free flow of information, ideas, experience, and knowledge between INTOSAI members (social capital). In order to achieve the above mentioned positions, several Communications Objectives were established.

– Establish new and maintain existing working groups

– Facilitate best practice studies consistent with diversity and sovereignty considerations

– Encourage effective INTOSAI communication:

The communication mechanism has to correspond to the needs of SAIs, with consideration for communication instruments, such as the INTOSAI website (www.intosai.org), INTOSAI documents, the individual websites of various INTOSAI bodies, the International Journal of Government Auditing and the Collaboration Tool. The General Secretariat will also facilitate and encourage committees, working groups, and task forces to interact and improve connections with each other on matters mutually relevant to them and innovate and develop other effective methods of communication and share these with colleagues. After a short overview, we can say that the commitment towards effective information flow and knowledge transfer is acceptable (INTOSAI, 2007b, 2010a, b).

The *second step* is network mapping. By drawing the structure of the real connections emerging from the formal hierarchy of the organization, it could help us to detect and measure the parameters defining the key features of the web. These properties appoint the future directions of network building and improvement of effectiveness. Such network metrics are the degree distribution, average path length, community structure, transitivity, vulnerability, resilience, efficiency, robustness and stability. For detailed definitions, see Newman's and Fortunato's comprehensive studies (Newman, 2003; Fortunato, 2010). Due to the lack of detailed information about the real time interactions within the organization, we will only propose several developments for network building.

The *third step* is network building, focusing on the desired vision of the INTOSAI and WGEA, in compliance with the initial research topic. At present, we live in a knowledge-based, globalized world, where the possession of applicable knowledge or the ability to learn makes one so adaptive, innovative and productive, that one can sustain a relatively higher standard of living and have wider margins for optimized decisions. In the case of an SAI, organizational adaptability and innovative skills create higher added value of its audit activity. In recent management studies relating to organizational knowledge creation, innovation and productivity, a relevant appreciation of human and social capital and their interactions can be found (Greve et al., 2006). There is a proved relationship between them, both human and social capital have a positive effect on productivity although Grave and Burt demonstrated that the contribution of social capital was predominating in their observations and in academic literature as well (Krebs, 2007). In this aspect, human capital is such skills, capabilities and other features of an individual that make him or her capable of creating realizable value. Social capital, according to Greve and Krebs, can be defined as a property of personal networks – the ability to reach others, inside and outside the organization, for information, advice and problem-solving (Krebs, 2007; Greve et al., 2006). In this context, the harmony between human and social capital is the key element in creating knowledge and increasing output performance. If we accept these findings we can draw a parallel with WGEA and take further steps to enhance the impacts of audit findings.

The management and cultivation of human capital can be interpreted as professional capacity building at INTOSAI and WGEA. Under this kind of capacity building we understand the creation and improvement of applicable personal auditing expertise, broader and more complex knowledge of applied internal and external human capital and other knowledge-creating potency that will contribute to SAI's work. The INTOSAI's Capacity Building Sub-Committee paraphrases it as the skills, knowledge, structures and ways of working that make an organization effective. Building capacity means developing further each of these, building on existing strengths, and addressing gaps and weaknesses (INTOSAI, 2007A). For better understanding and placing the notion we define the "auditing knowledge" of a SAI: the ability to create an auditing routine, practice on professional basis to meet the relevance expectations of its stakeholders and to increase the results and impacts of audit outcomes in order to achieve sound financial management in public finance. To solve complex challenges and to adapt to new conditions in case of possible audits dealing with sustainable development issues a SAI has to face a broad spectrum of increasing analytical and methodological complexity. This is the reason why many SAIs are continuously building its professional capacity which could happen through internal trainings in partnership with the INTOSAI Development Initiative, course materials, detailed instructor manuals, staff development programs and daily formal and informal exchanges between colleagues and partner institutions worldwide. Responding to circumstances with professional responsibility, the SAI is obliged to improve both the human and the social capital, namely capacity building and cooperation or liaison building. These two factors should work together to create auditing knowledge on organizational level and to facilitate its dissemination. The social capital of a supreme auditor community can be interpreted - referring to Greve – as a property of personal/institutional network representing information flow and knowledge sharing between vertices and the structural pattern which emerged from the formal hierarchy. In other words, we refer to the ability to reach others (members, colleagues, concerned stakeholders) inside and outside the organization for information, advice and problem-solving. From "The sixth survey on environmental auditing" (INTOSAI, 2009), it becomes obvious that member organizations appreciate cooperative activities and find it a significant and useful tool in their work. Cooperative audits are merely one kind of the cooperative tools but the more relevant. For the institutions cooperative audits foster mutual sharing of knowledge and learning, capacity building, networking and recognition of best practices. Cooperative audits are audits in which two or more audit institutions are involved and can be defined as having three types (INTOSAI, 2007B):

– Joint audit: an audit conducted by one audit team composed of auditors from two or more SAIs, who prepare a single, joint audit report for publication in all participating countries. In practice, they are rare.

– Concurrent or parallel audit: an audit conducted more or less simultaneously by two or more SAIs, but with separate audit team from each SAI reporting only to its own government and only on the observations and/or conclusions relating to its own country. This implies that the participating SAIs may each adopt a different audit approach suited to national needs and preferences. Information exchange is the most important aspect of this form of cooperation.

– Coordinated audit: any form of cooperation between joint and concurrent audits. In a coordinated audit, participating SAIs at least coordinate or harmonize their audit approaches in some way, but differences between countries are possible. This can be a joint audit with separate reports; more commonly, it is a concurrent audit with a joint audit report in addition to separate national reports.

To exploit the synergic effects of information flow within the institution and thereby create organizational knowledge to intensify adaptability, we suggest the introduction of a network approach – based on scientific fundamentals – and the development of an effective network. At this point, we return to our former train of thought and identify specific patterns that could already allude to presence of effective network at INTOSAI (KREBS, 2002):

1. An effective network contains communities, modules, clusters where the concentrations of vertices and edges could be derived from common attributes, goals or governance that shaping the structure and affecting activities. This feature of a network is often called a community structure, or clustering. Fortunato defines it as the distribution of edges when it is not only globally, but also locally inhomogeneous, with high concentrations of edges within special groups of vertices, and low concentrations between these groups (FORTUNATO, 2010). In the case of our investigatedion, we can treat the working groups (WGEA) or regional formal cooperation efforts (e.g. EUROSAI, ARABOSAI) as communities.

2. The diversity refers to connections between diverse vertices (auditors, experts), fixed formal structures (SAIs) or communities. We found a high degree of diversity manifested in different mandates, different auditing issues.

3. The robustness of a network: the linkages and paths between member SAIs and the well-developed means of communication and cooperation within INTOSAI could contribute to fluent information flow and knowledge transmission.

4. There are several SAIs or special communities playing special roles in knowledge sharing; for instance, they speed up the dissemination of best practices or link diverse groups. Their functions are vital for network health. The Steering Committee of the Capacity Building Committee or the Steering Committee of the Committee on Knowledge Sharing and Knowledge Services could function as a broker or boundary spanner (see above).

5. There is a decreasing trend in the average path length in real networks that could induce real time information availability via internet and make knowledge exchange easier. We must distinguish however between explicit knowledge and complex tacit knowledge. Explicit knowledge can be easily codified and disseminated indirectly even electronically such as auditing standards or simplified methods. The most relevant means of dissemination are e.g. the INTOSAI or WGEA web page, guides, publications and e-learning materials. Tacit and complex knowledge (e.g. performance auditing, professional capacity building, special organizational knowledge to be shared with members) requires direct relationships, trust and sharing of experiences and must be dispersed through human networks (KREBS, 2007). A wide range of means can be found at INTOSAI for transferring tacit knowledge for example trainings, exchange programs, cooperative audits (see above).

## Concluding remarks

Due to its complexity, the concept of sustainable development requires new skills, new approaches and special methods for problem solving. A supreme audit institution (SAI) can contribute to this process by its audit functions directly and indirectly. In order to improve short and long term effects of its audit outcomes, an SAI has to adapt to the challenges, trends and expectations arising from sustainable development commitments. One possible way to do this is by creating auditing knowledge both on the state (SAI) and global levels (INTOSAI), by exploiting positive effects of cooperation and professional capacity building. The network theory which deals with analyzing social connections and interactions could be a useful concept to serve this idea. After assaying and mapping the features and conditions, we suggest that INTOSAI create new connections between distant vertices to reduce information distortion and entropy. At the same time, the introduction of network management would be needed to improve both human – to generate local audit knowledge – and social capital within INTOSAI to disseminate and create organizational knowledge, in order to deepen the impacts of audit findings relating to sustainable development.

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