

6th Annual Scientific Conference

October 3, 2020, Caucasus University, Tbilisi, Georgia



09:30-09:40	Welcome Speech	Kakha Shengelia, Caucasus University President
Panel 1. Economics and Social Sciences		
Time <i>15 min. presentation</i> <i>5 min. discussion</i>	Paper	Author, Affiliation
09:40-10:00	Common Goods Role in Sustainable Economic Development	Aleksandre Mikeladze, Givi Nadiradze; Caucasus School of Business, Tbilisi State University
10:00-10:20	Media Literacy VS Online Gambling	Giorgi Jologua, Caucasus School of Media
10:20-10:40	Energy-Performance Contract and Their Conclusion in the State Procurement process	Levan Mosakhlishvili, Caucasus School of Law, Energy Ambassador of the EFIX Project
10:40-11:00	Pension Reform Options in Georgia: Challenges and Opportunities	Tengiz Verulava, Caucasus School of Medicine
11:00-11:20	Land Relations in Ukraine	Olena Kireitseva, Oleksii Zhylin, National University of Life and Environmental Sciences of Ukraine
11:20-11:30	Break	

Panel 2. Information Technologies

Time <i>15 min. presentation</i> <i>5 min. discussion</i>	Paper	Author, Affiliation
11:30-11:50	The Relevant Problems of Post Quantum Cryptography	Maxim Iavich, Giorgi Iashvili, Caucasus School of Technologies
11:50-12:10	Modern Security Problems of Hardware-Based Systems	Giorgi Iashvili, Maxim Iavich, Caucasus School of Technologies
12:10-12:30	Role of Partnerships in Developing a Strategy for Smart Cities	Catalin Vrabie, National University of Political Studies and Public Administration, Bucharest
12:30-12:40	Break	

Panel 3. Humanities and Social Sciences

Time <i>15 min. presentation</i> <i>5 min. discussion</i>	Paper	Author, Affiliation
12:40-13:00	Exotic Geographies: Georgian-European Imaginary Worlds	Giorgi Tavadze, Georgian – American University
13:00-13:20	Focusing the German Foreign and Security Policy with Respect to Georgia	Mamia Balakhadze, National Defence Academy
13:20-13:40	Georgia, Turkey and Iran - Challenges for the Regional Policy	Giorgi Sanikidze, Ilia State University

Panel 1. Business, Economics and Social Sciences

Common Goods Role in Sustainable Economic Development

Aleksandre Mikeladze, Givi Nadiradze; Caucasus School of Business, Tbilisi State University

In modern days, common good has an important role in contributing to the economic development and while evaluating the economic value of the common good following factors are taken into consideration: long-term approach and profit maximization without harming the environmental aspects that may bring potential benefits. The sustainability is one of the fundamental aspects while talking about common goods and environmental resources can serve as an important problem solver for local community, e.g. common pastures. In sustainable development, one of the focal point is an environmental aspect as in the concept of the common good, the environmental resources are referred to major resources. The fair distribution of the available resources ensures the most equal possible access for all community members leaving space for restoration. Such measures are highly needed for sustainability and improvement of livelihood of local communities regardless the property diversity. The conference material will analyze and overview the great benefits of common good for supporting sustainable development of Georgia.

Media Literacy VS Online Gambling

Giorgi Jologua, Caucasus School of Media

The developments in the telecommunication systems as well as the increasing rates of internetization are evidently accompanied by certain risks and challenges globally. One of the challenges occurring in Georgia represents the alarming numbers of adolescents engaging with online gambling. A study conducted by a local NGO in 2019 suggests that 48 per cent of interviewed adolescents (age 14 to 18) confirmed their involvement with gambling activities. While the challenge calls for an immediate attention, the approach must be designed with a great caution as psychologists warn about certain risks which might accompany the process of working with school children on gambling related issues. Therefore, the Media Research Center at Caucasus School of Media (CSM) has developed an innovative approach to the issue – the Media Literacy approach, which intends not to merely discuss the negative aspects of online gambling with the adolescents but rather to demonstrate to them how the gambling industry is manipulating their minds through advertisements in order to involve them and to keep them involved in gambling activities. CSM has prepared a special seminar module on the respective issue and is delivering the seminars at schools across Georgia. The research process as well as the research findings will be presented and discussed at the conference.

Energy-Performance Contract and Their Conclusion in the State

Levan Mosakhlishvili, Caucasus School of Law, Energy Ambassador of the EFIX Project

In 2017 Georgia joined Energy Community, after which with respect to implementation of Energy field legislation, terms of article 218 of associate agreement became applicable, according to which terms of the Energy Community Charter and amendments to the European Union legislation undertaken via the Charter have priority over the terms under the Associate Agreement energy field trading chapter.

In the annex XXV of the Associate Agreement a list of relevant EU Directives and Regulations is provided, to which approximation of legislation is obligatory for Georgia. In order to ensure the fulfillment of that obligation, the Parliament of Georgia adopted a “Law of Georgia on Energy Efficiency”, which is in full compliance with Energy Efficiency Directive 2012/27/EU of the European Council dated on 25 October 2012.

Fulfillment of the aims of the law will support the increase of energy efficiency in Georgia and therefore saving of electricity via economically and ecologically sound measures. In particular it will cause increase of energy efficiency in energy supply and final energy consumer sectors; regulation of increasing demand on energy resources and creation of economically and ecologically sound energy management practice; reducing energy resources import dependence, improving outside ecological and inside building climate conditions, which is one of the factors for protecting health, improving capacity for work and at the educational institutions improving teaching process and developing pupils.

One of the new institutes which was introduced via the new law is the energy performance contract. Energy performance contract is a contractual relationship between the provider and the receiver, which is being supervised and checked during the whole term of the contract and the invested amount in the works, services or goods is compensated by the contract agreed improvements and/or other energy agreed criteria, including financial savings. The article concerns the rules applied during energy performance contracts in public procurement and problems associated with it.

Pension Reform Options in Georgia: Challenges and Opportunities

Tengiz Verulava, Caucasus School of Medicine

The existing financial, demographic (aging, rising longevity, declining fertility rate) and economic challenges have determined the establishment of a new pension system in Georgia. In July 2018, Georgia adopted a mandatory individual retirement plan for employees. Georgia started reforming the existing old solidarity pay-as-you-go (PAYG) pension system to the multi-pillar mixed model, which is more in line with practices in developed countries. The funded pension system became mandatory for employees under age of 40, for older employees, it is voluntary. This

scheme consists of the activation of a so-called “funded pension”, to which everyone will make a minor contribution — the employee, the employer and the state treasury. The system is working on the basis of 2%+2%+2% scheme. This means that employees shall pay 2% of their gross salaries to the pension fund, while employers and the government will add additional 2% each. The new programme is mandatory for legally employed people under 40, meaning they will be enrolled automatically, and voluntary for people above 40 as well as for self-employed citizens. The system of accumulative pensions has been introduced successfully in Europe and other developed countries. Any decision about possible reforms should be based on comprehensive analysis and study of international experience.

Land Relations in Ukraine

Olena Kireitseva, Oleksii Zhylin, National University of Life and Environmental Sciences of Ukraine

Land has always been of great importance to the Ukrainian people in all aspects of their lives and activities. This is an indisputable truth that does not need validation in the value system.

The environment is the natural and man-made material world with which society interacts in the course of its existence and production activities.

Land management is an activity aimed at creating conditions for the rational use and protection of land.

The basis of land management should be the implementation of state policy aimed at high-tech environmentally friendly land use, which is consistent with the nature of a regulated, socially oriented market economy.

In order to ease the situation in land management, the responsible authorities are trying to justify the existing problems with the imperfection of macroeconomic policy in the country, and the ingenious manifestations of Ukrainian thought are silenced and forgotten. Such a policy is wrong and contrary to the interests of society and the state.

Panel 2. Information Technologies

Role of Partnerships in Developing a Strategy for Smart City

Catalin Vrabie, National University of Political Studies and Public Administration, Bucharest

Many smart city publications talk of a need for new models of partnership working: public–private partnerships that create a shared vision for the smart city, bringing together leaders from city government, national government, health services, universities, business, social enterprises and the community sector. But as it is already known, crucial to the acceptance and success of smart cities is the involvement of citizens. Cities in which citizens take a central role are creating public–private–people partnerships. There’s no clear beginning or end to the process of becoming smart: the road to smart cities is a transition process that can take 10, 15 or even 20 years. Today’s

decisions on city infrastructures and services will have consequences for the future generations who live in the city. There needs to be a huge cultural shift away from working in silos and towards integration across organizations, cities and countries. Smart city partnerships need to bring people together but they also need to be a vehicle that commissions and manages smart infrastructure and technology, dealing with issues such as finance, privacy and security. This paper will discuss about this issue providing examples of success stories found in Europe.

The Relevant Problems of Post Quantum Cryptography

Maxim Iavich, Giorgi Iashvili, Caucasus School of Technologies

Scientists are actively working on the creation of quantum computers. Quantum computers can easily solve the problem of factoring the large numbers. Because of this, quantum computers are able to break the crypto system RSA, which is used in many products.

Hash based digital signatures are the alternative of RSA. These systems use cryptographic hash function. The security of these systems depends on the resistance to collisions of the hash functions that they use. In the paper are analyzed hash based digital signature schemes, one time ones and Merkle.

One-time signature scheme - "Lamport One Time Signature Scheme" was offered.

To sign the message m of any size, it is transformed into size n using the hash function. The size of the signature is n^2 . Winternitz One time Signature Scheme is given to reduce the size of the signature.

One time signature schemes are ineffective in practice, because each pair of keys can only be used to sign one document. Ralph Merkle proposed the use of a binary hash tree to minimize the arbitrary, concrete number of one-time verification keys to the single public key. This approach enlarges the size of the signature. In the paper we offer the method to decrease the size of the digital time signature, which is the main problem of hash based digital signature schemes.

Modern Security Problems of Hardware-Based Systems

Giorgi Iashvili, Maxim Iavich, Caucasus School of Technologies

A lot of organizations and systems are using hardware-based mechanisms today. The design and implementation of efficient cyber security mechanisms essentially relies on the consideration of proper algorithmic cores. Thus, the improvement of the efficiency and security of automation mechanisms can be realized by allowing the central processing unit of the machine work at the same time on some aspects of the system together with the relevant software components.

Attacks on central processor are also popular today. The most common - CPU side-channel attacks are performed on different types of processors. Another popular central processing unit oriented

side-channel attack is the ZombieLoad Attack, which primarily targets the recent versions of the processors that are released by Intel. Together with this, world of Internet of things is also growing very fast and smart devices related security problems are becoming more and more relevant today.

Considering the existing problems that pertain to the hardware infrastructures, especially in larger organizations, it is extremely important to find a way in order to prevent the attacks on the devices, which in most cases are storing and transmitting confidential information. Considering the results of our analysis, it can be asserted that the type of the attacks and their frequency varies based on the industry, the use case context, and the usage scope for each device.

The goal of the research was to understand the weaknesses of hardware-based devices and related software systems, in order to improve the necessary security mechanisms.

Panel 3. Humanities and Social Sciences

Exotic Geographies: Georgian-European Imaginary World

Giorgi Tavadze, Georgian – American University

Travel narrations play an important role in the process of intercultural dialogue. Among them there are texts which hold a dominant position in the travelling discourse. Several factors contribute to the dominance of a particular text: the author of the text might be a renowned figure, or his/her text might contain some very detailed/sensational/previously unknown information, or the text of a given author might become an object of reception of some influential scholar etc. In the 19th century narrations about Georgia Voyage to the Caucasus (1859) by Alexander Dumas is particularly interesting. In my speech I will analyze Dumas's Voyage in the context of conceptual framework developed by Palestinian academic Edward Said. I will argue that in Dumas's narration – where author's Eurocentric views are easily discernible – emerge those features which, according to Said, were indispensable to the Orientalist discourse: in Voyage Caucasus is described as a land of exotic peoples and colours, which promises unforgettable experiences to the traveler. It is noteworthy, that Dumas's narration represents not only European imaginary geography, but imperial Russia's imaginary geography as well.

In the given context the travel narrative of Georgian diplomat and writer Sul Khan Saba Orbeliani deserves particular attention. His work Journey into Europe (1713-1716) is a first Georgian travelogue about Europe. Orbeliani produces his own imaginary geography: Europe depicted by him is also full of exotic places. Nevertheless, this is a different imaginary world, which is permeated by the awareness of European cultural and material superiority and acknowledgment of backwardness of the author's homeland.

Lastly, it should be noted, that production of imaginary geographies is an ongoing process: in the context of our globalized world and accompanying political, social, and cultural transformations

there emerge new exotic geographies, shaped largely by mass media and the internet. It can be said that production of exotic geographies is an indispensable tenet of social imagination.

[Focusing the German Foreign and Security Policy with Respect to Georgia](#)

[Mamia Balakhadze, National Defence Academy](#)

“Ostpolitik”, the main vector of German foreign policy, was formed by Willy Brandt, the German Chancellor, that meant establishing and maintaining relations with Eastern European countries. The policy is based on the "Détente" principle of warming of relations, which means "changes through rapprochement." After the collapse of the Soviet Union and the integration of Eastern Europe into the European Union, foreign policy began to reshape. It was formulated as the “European Neighborhood Policy”. In the EU, Germany is a key actor in the process of Eastern policy development. After the Russian-Georgian war in 2008, much of Europe's attention was focused on the formation of a "security and foreign policy". Conflict resolution and the geopolitical significance of the region, characterized by tension, are of great importance to Europe. For Germany, energy security and economic relations with Asian countries are important. In this relationship, Georgia can become a transit country for Western energy supplies and resources. In particular, Georgia offers alternative oil and gas transportation routes from the Caspian Sea to Turkey. Germany can become an active political actor in the Caucasus and in Georgia, first of all, Germany can act as a mediator between the West and the Russian Federation. The main ratio in German security policy is "maintaining peace in Europe and the world and being a secure ally in collective security policy." In 1991, Germany became the first country that recognized the independence of Georgia. In the Federal Republic, the contribution of Eduard Shevardnadze, later on, the President of Georgia, in the process of the unification of peace and freedom in Germany remains unforgettable. Significant achievements in German development policy, particularly in the area of energy supply, have resonated in Georgian society and politics. The participation of Germany in international mediation efforts to resolve the regional conflicts in Abkhazia and South Ossetia in a political manner is significant. The foreign-policy relevance of German-Georgian relations as a bridge between Central Asia, specifically, the Middle and the Near East, and the Caucasus region, in particular, the South Caucasus, is of strategic importance for the maintenance of European peace. Stability in this region can send a positive signal to Europe, while instability may contribute to increased risk potential in neighboring countries and regions. Against this background, Germany is keen to establish economic and political relations with neighboring Eastern European countries that will be based on both security and economic stability. It also refers to Georgia as an important partner of the Caucasus in the prospect of establishing a sustainable European peace order; Germany, as a major EU power, has a fundamental interest in

ensuring stable and peaceful development in Eastern Europe. The achievement of that goal will largely depend on whether Germany can build relations with Russia or not.

Georgia, Turkey and Iran - Challenges for the Regional Policy

Giorgi Sanikidze, Ilia State University

After emerging from the Soviet Union as an independent state, Georgia resumed its Middle East policy, and pursued it actively. The centerpieces of Georgia's Middle Eastern policy are Turkey and Iran. For Georgia, relations with these two neighbors require different strategies. Turkey has been perceived as a "bridge," linking Georgia to the West. Iran has a different role. In relation with Iran surely it would be more appropriate to consider the significance Georgia as a link for Iran (first and foremost economically, but also politically) to the outside world and to what extent Georgia uses these factors in its foreign policy towards Iran.

This article explores key aspects in the evolution of Georgia's foreign policy towards its two crucial neighbors. I place emphasis on specific issues such as to what extent are there common interests Iran and Turkey on the one hand, and Georgia on the other? What is the impact of current political processes within Iran and Turkey on relations with Georgia? And to what degree do the internal changes in Georgia affect its own foreign policy toward its southern neighbors. Activity of the Turkish and Iranian communities of Georgia, the authorities' and civil society's attitudes towards the Turkish and Iranian "factor", and towards activity of these communities also is given attention. Assumptions are made about interfering and contributing factors affecting deepening relations over the short term.