



The Development Pathway for Developing World Scientific and Technological Cooperation along the Belt & Road

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President of TÜBİTAK

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Principles of Publication

At a time when U.S. ambitions for a unipolar world order have lost their appeal, a new order is taking shape thanks to the multipolarization of world politics and the acceleration of cooperation between developing countries, rejecting the globalism of imperialist states. Under these conditions, the new agenda of global cooperation should respond to the needs and aspirations of developing countries seeking joint development and solidarity under the guidance of public-driven projects. In particular, the Belt and Road Initiative (BRI) -put forward in 2013 by Xi Jinping, President of the People's Republic of China- provides a suitable opportunity and a sound foundation for the implementation of this new agenda of global cooperation.

BRI is an epoch-making move to re-implement the concept of the Silk Road, which dates back 2,000 years, to a time when China was immensely contributing to global prosperity and the development of trade and cooperation. The revival of this concept entails a much more comprehensive approach that also incorporates rail and sea transport, and digital systems.

BRI proposes to bring together over 60 countries across Asia, Europe, Africa, and Latin America –together accounting for nearly half of the world's gross domestic product– for prosperity and development at the initiative of China. Unlike the Western-centered world order, BRI seeks peaceful collaboration for improving global trade and production towards common goals for humanity. It firmly rejects crude imperialist exploitation. Two thousand years ago, the Silk Road was a conduit for the flow of gunpowder, spices, silk, compasses and paper to the world. Today, it offers artificial intelligence, quantum computers, new energy and material technologies, and space-age visions to developing countries. In addition, the New Silk Road provides incentives and opportunities for the development and implementation of bio-economic schemes in stakeholder countries against the threat of climate change and other environmental threats that bring the entire ecosystem to the brink of extinction.

Türkiye has a significant role –real and potential– in accelerating South-South cooperation. Türkiye is conveniently located as Asia's farthest outpost to the West. It assumes a critical position as a pivotal country on BRI's North-South and East-West axes. However, China's development and BRI's contribution to the future of humanity have remained to a large extent underrecognized and superficially evaluated in Turkish academia, media, and politics. This is mainly because Türkiye's academics, media professionals, and policy makers have been observing China using Western sources. In the same manner, China and BRI's other potential partners have been viewing Türkiye through a Western lens.

BRIQ has committed itself to developing an in-depth understanding of the present era, with a particular emphasis on the new opportunities and obstacles on the road to the New Asian Century.

BRIQ assumes the task of providing direct exchange of views and information among Chinese and Turkish academics, intellectuals, and policy makers. In the meantime, this journal will serve as a platform to bring together the intellectual accumulation of the whole world, especially developing countries, on the basis of the Belt and Road Initiative, which presents a historic opportunity for the common future of humanity.

BRIQ is also devoted to publishing research and other intellectual contributions that underline the transformative power of public-driven economies, where popular interests are upheld as the basic principle, ahead of individual profit. The fundamental tasks of BRIQ are to demonstrate how BRI can contribute to the implementation of this public-driven model, and to help potential BRI partners -including Türkiye- to realize their real potential.

BRIQ stands for the unity of humanity and a fair world order. It will therefore be a publication for the world's distinguished intellectuals, especially those from Eurasia, Africa, and the Americas: the defenders of a new civilization rising from Asia on the basis of peace, fraternity, cooperation, prosperity, social benefit and common development.

Submission Guidelines

BRIQ features a broad range of content, from academic articles to book reviews, review essays, interviews, news reports, and feature articles.

The Editorial Board can issue calls for papers for special issues and invite authors to contribute manuscripts; however, it also welcomes unsolicited submissions.

Submissions are invited in English or Turkish. All submissions are to include a short biography (150-word limit) and should be sent as Microsoft Word attachments to briq@briqjournal.com Articles or other content that have been previously published or are under review by other journals will not be considered for publication.

BRIQ follows American Psychology Association (APA style, 7th edition, <https://www.apastyle.org>) and uses American English spelling.

BRIQ applies a double-blind review process for all academic articles.

Academic articles should be between 5000 and 9000 words in length, including abstracts, notes, references, and all other content. Please supply a cover page that includes complete author information, and a fully anonymized manuscript that also contains an abstract (200-word limit) and five keywords.

Book reviews should not exceed 1,000 words; review essays covering two or more works can be up to 3,000 words.

News reports consisting of brief analyses of news developments should not exceed 1,500 words; feature articles combining reporting and analysis can be up to 3,500 words.

Please contact the Editorial Board for interview proposals.

EDITORIAL

The task facing the emerging civilization from Asia

The primary challenge confronting developing nations globally is the attainment of sustainable development. To achieve this objective, governments must undertake substantial strides in the realm of research and technology. Nonetheless, it is acknowledged that there are no shortcuts for this. To establish its own growth trajectory, each nation will assess its existing and potentially accessible national resources and capabilities. Initially, impediments that restrict or obstruct the evaluation of the existing national capacity must be eradicated. Secondly, to attain the developmental objective, the potential of the state and society must be activated. These objectives can be attained by structuring the state's institutional framework in alignment with this aim.

The principal force for attaining sustainable development is humans, the fundamental productive force. That is, human capital is a country's most important resource. Developing nations must implement a sustainable, human-centered planning strategy to attain development. The essential element of this strategy is to establish medium- and long-term objectives and to restructure the state and society accordingly. The prevailing neoliberal system prioritizes the powerful and sidelines the marginalized. However, engaging the entire populace is essential for genuinely sustainable and effective development. To mobilize the entire people, the development plan must be founded on principles that address societal disparities and respect the interests of the whole public.

It is clear that the imperialist system's imposition of neoliberal free market principles on developing nations yields no benefits in terms of development. Furthermore, these impositions hinder these nations from realizing their distinct developmental objectives and result in further reliance on the imperialist system. Consequently, emerging nations must formulate a long-term plan grounded in the public interest.

Another imperative is the significant scientific and technological gap that the emerging world must bridge with industrialized nations. In the contemporary era, to liberate themselves from the constraints of the imperialist system, nations of the Global South must establish an alliance in the domains of science and technology, akin to their collaboration in the security field. In order to address each nation's needs, a partnership is formed in which nations pool their superior resources and talents and support one another in the face of adversity.

The Belt and Road Initiative (BRI) has initiated collaboration in science and technology inside the Global South, among other fields. Countries involved in the BRI are engaging in various collaborations in scientific cooperation, including exchanges of students and scientists, co-organized scientific events, jointly constructed research laboratories, and high-quality collaborative scientific and technological projects. Nevertheless, we remain at the inception of the journey. Together with their collaboration in other areas, emerging nations' collaboration in the scientific and technological spheres will be a major step toward creating a fair and just world for all people.

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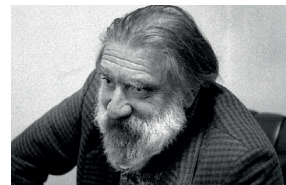
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President of TÜBİTAK

Prof. Dr. Orhan Aydın*

“We will Ensure the Mobilization of the R&D and Innovation Ecosystem within the Scope of Green and Digital Transformation”



**Prof. Aydın was a faculty member at Karadeniz Technical University, Department of Mechanical Engineering, Department of Thermodynamics, and was appointed as a professor in 2007. He has supervised 11 Ph.D. and 11 M.S. theses. He has worked as a manager, researcher and consultant in national and international funded projects, especially The Scientific and Technological Research Council of Türkiye (TÜBİTAK). Prof. Aydın worked as a post-doctoral researcher and guest lecturer at the University of Michigan (Ann Arbor) between 1999-2001 and 2003-2004. Prof. Aydın has published more than 140 articles in more than 140 internationally reputed journals, one book chapter published by an internationally reputed publisher and many national and international papers. Prof. Aydın's h-index is 41/49 (Web of Science/Google Scholar) and these papers have been cited around 4700/7500 (Web of Science/Google Scholar). Prof. Aydın has received national and international awards for his work: METU M.N. Parlar Foundation Research Incentive Award in 2007, TUBA Outstanding Young Scientist Award in 2008, TÜBİTAK Science Incentive Award in 2008 and TWAS Associate Membership Award in 2009. Prof. Aydın was elected as a full member of the Turkish Academy of Sciences (TÜBA) in 2021. Prof. Aydın's research interests are in the areas of thermodynamics, heat and mass transfer, fluid mechanics, flow physics in micro-electro-mechanical systems, flow boiling, flow and heat transfer in biological systems, electronic cooling and energy storage. Prof. Dr. Orhan Aydın has served as a member of the Higher Education Council Supervisory Board (2016-2018), Higher Education Council Institutional Advisor (2012-2016), TÜBİTAK TEYDEB Technology Centres Committee Member (2013-2016; 2020-2023), TÜBİTAK ULAKBİM Board Member (2022-), Turkish Patent and Trademark Office Advisory Board Member, and Turkey Qualifications Framework Board Member. He served as the Rector of Tarsus University between September 2018 and September 2024. Prof. Dr. Orhan Aydın has been appointed as the President of TÜBİTAK from September 14, 2024.*

“As Türkiye takes determined steps in the scope of a green and digital transition towards our net-zero emissions target for the year 2053, TÜBİTAK will ensure the mobilization of the R&D and innovation ecosystem for this target in the context of sustainable development. Through this vision, we are creating opportunities and synergies for producing more sustainable, resilient, and efficient impacts for the future. In the coming period, we are transforming the business models of TÜBİTAK Research Centres and Institutes to put open innovation at the centre. In addition, the TÜBİTAK Artificial Intelligence Institute plays a pioneering role in the ecosystem for a green and digital transition. Efforts are underway to develop scientific and technological co-operation in the geographical regions in which Türkiye has an influence or is part of, which, although not exactly similar to the ‘European Research Area’, contain similar elements. Within the framework of the Organization of Turkic States (OTS), under the leadership of TÜBİTAK, important steps are being taken to support joint R&D and innovation projects among member states. TÜBİTAK is also among the Founding Members of the Alliance of International Science Organizations of the Belt and Road Initiative (ANSO). Our Institution, honoured by this development, was then elected to the ANSO Board of Directors as of January 2022. We will continue to come together with institutions and organisations producing science, technology and knowledge from all over the world, strengthen collaborations for researchers, and continue our science diplomacy activities meticulously.”

Could you briefly summarise Türkiye’s approach to science, technology and innovation policies in recent years and the concrete results achieved?

Prof. Dr. Orhan Aydın: Our approach to science, technology and innovation policies is based on the Twelfth Development Plan of Türkiye for the year 2024-2028. This plan puts forth the vision of being “A stable, strong and prosperous Türkiye that is environmentally friendly, resilient to disasters, produces high value with

advanced technology and shares income fairly in the Century of Türkiye.” The R&D and innovation ecosystem will shape the pathway of realizing this clear vision and TÜBİTAK, together with the Ministry of Industry and Technology, are taking leading steps in guiding this direction. As an innovative, direction-setting, and cooperating institution working together with and guiding the R&D and innovation ecosystem, TÜBİTAK is a pioneering institution in our 61th anniversary year and beyond.

As Türkiye takes determined steps in the scope of a green and digital transition towards our net-zero emissions target for the year 2053, TÜBİTAK will ensure the mobilization of the R&D and innovation ecosystem for this target in the context of sustainable development. Through this vision, we are creating opportunities and synergies for producing more sustainable, resilient, and efficient impacts for the future. We have a key role in mobilizing the R&D and innovation ecosystem of Türkiye to succeed in addressing important challenges. The need to address climate change, ensure a sustainable and healthy environment, and increase resource effi-

ciency and societal wellbeing is of critical importance. Let me give examples to share with you some of the concrete results that are achieved.

In 2024, TÜBİTAK is currently providing 8.4 billion TL support to 9,700 projects of 185 universities and 2,750 companies. These projects involve 14,300 scholarship holders. Our most important innovation was the design of support programmes where platform structures can be created that bring together all stakeholders in the relevant technological fields based on the needs of our country and global problems. We support High Technology and Industry Innovation Networks platforms, where we

Green Growth Technology Roadmap



The study was prepared in collaboration with **13** Public Institutions, **371** Private Sector representatives, **27** NGOs, **100** academics and researchers

bring together the private sector, universities, research infrastructure and public R&D centres. Within the scope of the Centre of Excellence Support Programme, we brought together 40 universities, 4 public R&D centres, 5 research infrastructures and 44 private sector organizations in 20 High Technology Platforms. A total of 252 projects are being carried out under these platforms. Under the roof of these platforms, projects are carried out in many fields such as smart home products, smart cities, additive manufacturing, health products, target-specific drugs in cancer, high efficiency silicon-based solar cell production, nanomaterials, avionic display technologies, cellular therapy products and clinical applications. Most recently, we opened the High Technology Platforms - Green Transformation Call to focus on priority R&D and Innovation topics in line with our country's 2053 net zero emission target. We received 31 applications to our call. The evaluation processes of the applications are ongoing.

In addition to platform structures, we support scientific research projects aimed at generating new knowledge, developing innovative approaches, presenting the current situation and problems with evidence-based scientific data and developing solution proposals in all fields with our university and public support.

R&D and Innovation Networks for Industry are formed as a technology ecosystem for the de-

velopment of high value-added products or product groups that will contribute to the growth of our country by creating innovation platforms in cooperation with the private sector, universities and the public sector. As a result of the 2020 call within the scope of SAYEM, 38 capital companies, 19 of which are SMEs and 19 large-scale enterprises, 15 universities and 2 research centres and 1 public research institute are involved in 4 platforms. Under these platforms, a total of 78 projects are being carried out in areas such as smart home products, smart cities, additive manufacturing and health products. We aim for these platforms and innovation networks to have a permanent and sustainable structure as technology production centres and technology-based innovation / product development centres of our country in the relevant fields.

In addition to platform structures, we support scientific research projects aimed at generating new knowledge, developing innovative approaches, presenting the current situation and problems with evidence-based scientific data and developing solution proposals in all fields with our university and public support. As TÜBİTAK, we attach importance to cooperation with our public institutions in areas that our country needs, and we open special calls developed with the co-financing model. In 2024, we opened special calls with the Disaster and Emergency Management Presidency (AFAD), Ministry of Agriculture and Forestry General Directorate of Agricultural Research and Policies (TAGEM), Ministry of Interior General Directorate of Civil Society Relations, Ministry of Youth and Sports, Ministry of Family and Social Services and Social Security Institution within the framework of the cooperation protocols we signed with our institutions. Our R&D-based collaborations with public institutions will continue.

TÜBİTAK Research Centres and Institutes further develop advanced technology and domestic products in priority, critical and strategic areas for our country. Our Research Centres and Institutes produce know-how and develop new technologies in critical areas, continue to support the industry by transferring this know-how to the private sector and act as a catalyst in the R&D and Innovation ecosystem. Our institutes and centres, which carry out their activities in the fields of software and electronic hardware, semiconductor and chip technologies, cyber security, blockchain technologies, next generation communication, digital technologies such as artificial intelligence; health technologies; smart transportation technologies including next generation railway and rail transit technologies; defence, aviation and space technologies; civil security technologies; environment, food and climate technologies; and basic sciences, will play a much more

active role in the R&D and innovation ecosystem of our country in the coming period. In the coming period, we are transforming the business models of TÜBİTAK Research Centres and Institutes to put open innovation at the centre. Our newest institutes include the TÜBİTAK Clean Energy, Climate Change and Sustainability Research Institute in support of the 2053 net-zero emissions target of Türkiye. In addition, the TÜBİTAK Artificial Intelligence Institute plays a pioneering role in the ecosystem for a green and digital transition. In this context, 28 projects were supported with a budget of 76.6 million TL through the Artificial Intelligence Ecosystem Calls launched in 2022. Within the scope of these projects, 28 SME-scale technology developing companies, 21 universities, and TÜBİTAK Marmara Research Centre (MAM) are working together to meet the needs of 17 large-scale and 10 SME-scale customer organizations in the ecosystem.

RDI Topics for the Compliance to EU Green Deal and Adaptation to Climate Change



33 Priority RDI Topics,
Detailed by the Science
and Technology
Commission of Climate
Council

RDI Topics for the Compliance to EU Green Deal and Adaptation to Climate Change (TÜBİTAK, 2024).

Support Programs to Prevent Brain Drain

Are the announced and implemented science and technology policies effective in reducing brain drain to a large extent? If there are factors that prevent them from being more effective, could you summarize them?

Prof. Dr. Orhan Aydın: First of all, investing in human resources is a necessity for a sustainable future. We continue our support for our qualified human resources that will build the bright future of our country and lead us to our future vision. In 2024, we provided 3 billion TL support to more than 91 thousand scientists and young people with our scholarship and support programmes.

To contribute to the projects to be carried out in research areas of strategic importance for our country, we continue to carry out the International Leading Researchers Programme and the International Young Researchers Programme in order to encourage leading researchers who have distinguished themselves with their high-level scientific and/or technological studies in their fields and who have experience working abroad to come to our country. In the first calls of our International Leading and Young International Researchers Programmes, 213 International Leading and Young International Researchers from 26 countries have received support to come to our country. Each of the supported qualified researchers are training five master's/doctoral students. To date, 1,290 students and researchers, including 416 PhD students, have taken part in the projects we have supported. We also completed the evaluation processes for the 1st period call for 2024. Of the 60 researchers who applied, 40 researchers have been awarded to initiate their research projects in Türkiye. We also opened the new call for applications. We continue to carry out the National Leading Researchers and National Young Leaders Programmes to support domestic scientists

who will carry out projects with the potential to make important discoveries or inventions, which include goals to achieve groundbreaking developments for our country in all fields of science and technology. We enabled them to include up to 5 PhD students and postdoctoral researchers in their project teams. This year, the number of National Leader and Young Researchers increased to 135. We support more than 700 scholars in these projects.

From these perspectives, the potential of science and technology policies to significantly reduce brain drain is directly related to the scope and continuity of the policies implemented. Various programmes implemented by TÜBİTAK are attracting attention and interest in these programmes is constantly increasing. Other prominent examples include the International Experienced Researcher Circulation Support Programme and the Support Programme for Scientists on Visiting or Academic Leave (Sabbatical). These programmes aim to attract qualified researchers to Türkiye. We are very pleased with the increasing interest in these programmes every year. We are trying to promote these programmes on different international platforms to further increase this interest. Furthermore, we contribute to increasing the attractiveness of our country's research ecosystem by diversifying and increasing our support for qualified and successful researchers working in our country. European Research Council (ERC) Projects Strengthening Support Programme also has a role in this process. In addition, investments and incentives in research and innovation infrastructure constitute the main elements of these policies, and programmes to increase international cooperation and mobility are also carried out by TÜBİTAK. Examples can be given from the Research Scholarship Programme for Doctoral Research Abroad, Research Scholarship Programme for Postdoctoral Research Abroad, and Research Scholarship Programmes for International Researchers.

Support for High School and University Students in Scientific Studies

What do you do as TÜBİTAK to support the success of young people at high school and university level in the international arena?

Prof. Dr. Orhan Aydın: In this scope, we continue to embrace all segments of society with TÜBİTAK's science and society activities. This year, we opened 10 Science Centres, bringing the number of Science Centres to 33. In the last year, we have brought together more than 4 million visitors with science and technology in our science centres. By the end of the year, we plan to put 5 more Science Centres into service. In addition to the support for the establishment of science centres, we will provide sustainability and capacity increase support to our

The TEKNOFEST Technology and Aerospace Festival is another remarkable opportunity for young human resources. The competitions in this year's TEKNOFEST Festival spanned a total of 49 categories and 127 sub-categories that attracted 1.65 million competitors.

science centres.

We also offer various programmes to encourage international scientific achievements of students. We provide support to our students in this field by encouraging participation in international and regional olympiads, especially in Science Olympiads. We aim to improve both their academic and technical skills through the training provided to them. Within

the scope of TÜBİTAK Science Olympics Programme, we won 73 medals, including 17 gold medals, in international and regional science olympiads in 2024. In addition, with the guidance of TÜBİTAK, we ensure that our students take part in the International Science and Engineering Fair (ISEF) and the European Union Young Scientists Competition (EUCYS). In this way, our young people have the opportunity to show themselves in the international arena and increase their interaction with their peers.

The TEKNOFEST Technology and Aerospace Festival is another remarkable opportunity for young human resources. The competitions in this year's TEKNOFEST Festival spanned a total of 49 categories and 127 sub-categories that attracted 1.65 million competitors. Among the main competitions of TEKNOFEST, TÜBİTAK organized over 15 competitions, including competitions for electric vehicles, unmanned aerial vehicles, artificial intelligence in transport, robotaxi, vertical landing rockets, electronic chips, hyperloop technology, blockchain technology, biotechnology, a quantum computing hackathon, advances for the national Pardus operating system, climate change, polar research, and a comprehensive research project competition for university students in thematic areas, including energy and the environment. The competitions for electric vehicles and unmanned aerial vehicles are organized both at the international level and high school levels.

Beyond these programmes and initiatives, we also have programmes at high school and university level, which enable students to gain experience abroad and participation in scientific education activities abroad. Programme for Supporting Participation in Scientific Education Activities Abroad and Programme for Supporting Participation in Scientific Activities Abroad within the Framework of International Agreements are important in this respect. Through such programmes and initiatives,

Türkiye's young scientific talents are becoming internationally recognised and contributing to science. Participation in scientific events and international collaborations play a key role in the development of our young researchers.

Technoparks and Support for Technology-Based Entrepreneurship

How do you evaluate the contribution of the technopark policy implemented in Türkiye to the economic development of our country? In order to increase this effect in the future, what qualitative development is needed in addition to quantitative development?

Prof. Dr. Orhan Aydın: Technoparks, as technology development zones are called in practice, make significant contributions to industry, academia, regional and national economy. Technoparks encourage the creation of new employment areas and the utilisation of national and international resources by academicians and entrepreneurs through the technology transfer offices within their structure. It is possible to transform the knowledge obtained as a result of academic studies at universities into commercial value needed by the industry. In addition, with the incubation services offered to enterprises, R&D activities are transformed into production activities, contributing to both universities and the national economy.

12th Development Plan - Priority and Key Technology Areas

Digital Technologies	Innovative Technologies Serving Industries
<ul style="list-style-type: none"> ➤ Artificial Intelligence, Big Data and Cloud Computing, Cyber Security Technology Roadmaps ➤ 6G Technologies ➤ Digital Game Technologies ➤ Micro-Nano-Opto-Electro-Mechanical Systems (MNOEMS) ➤ Semiconductor Technologies ➤ Advanced Photonics and Quantum Technologies <p style="color: #c00000; font-weight: bold; margin-top: 10px;">120 R&D and Innovation Topics Directly Contributing to the Domestic Development of Digital Technologies</p>	<ul style="list-style-type: none"> ➤ Advanced Materials Technology Roadmap ➤ Motor Technology Roadmap ➤ Health Technologies <ul style="list-style-type: none"> ▪ Epidemiological Studies ▪ Biotechnological Pharmaceuticals Roadmap ▪ Personalized Medicine and Genome Editing ▪ Biomedical Devices/Equipment Technologies ▪ Domestic Diagnostic Kits ▪ Domestic Vaccines and Immunological Products ➤ Valuable Chemicals from Plant Sources ➤ Chemical and Biological (CB) Defense ➤ Dual Use Technologies ➤ Innovative Technologies for the Food Industry ➤ Innovative Technologies for the Automotive Industry <ul style="list-style-type: none"> ▪ Advanced Driver Assistance and Safety Systems ▪ Sheet and Metal Technologies for Lightweighting ➤ Innovative Sensors and Sensor Networks in the Electronics Industry <p style="color: #c00000; font-weight: bold; margin-top: 10px;">128 R&D and Innovation Topics Directly Serving Priority Sectors and Development/Key Technology Areas</p>

As part of the incubation services offered to start-ups, the first phase of the TÜBİTAK Investment-Based Entrepreneurship Support (BiGG Investment) Programme is carried out by Implementing Organisations. Implementing organisations provide technical expert support in the evaluation of business ideas and then business plans, technical consultant support in accelerator activities, promotion and dissemination, additional financing for pre-incubation activities, access to cooperation networks and access to financing resources. For this purpose, they are expected to cooperate with large-scale companies, universities, non-governmental organisations, cooperatives and relevant public institutions/organisations. Of the 149 organisations involved in 37 projects supported as Implementing Organisations, 43 are Technology Development Zones. In order for entrepreneurs to benefit more from the incubation services provided for entrepreneurs and entrepreneurs to benefit more from public resources, it is necessary to develop the necessary human resources and managerial organisations to increase the quality and efficiency of these services.

The role of entrepreneurship in transforming research and technology development activities into economic and social added value is indisputable. Since 2012, TÜBİTAK has been providing grants to the activities of entrepreneurs from the idea stage to the market within the scope of the Entrepreneurship Support Programme known as BiGG. To date, 2,370 technology initiatives have been established within the scope of this support. With the change made in the structure of the programme in 2023, an investment-based support mechanism was introduced with BiGG Investment and BiGG Fund was established. In 2024, TL 900,000, which is the support amount for 117 entrepreneurs who received the seal of excellence within the

scope of the BiGG Investment Programme, is transferred as an investment in return for a 3% share. In the first nine months of 2024, Türkiye ranked first in Europe in seed stage investments with the impact of TÜBİTAK BiGG Fund we established last year. During this period, a total of 247 seed investments were made in Türkiye, 228 of which were funded by TÜBİTAK BiGG Fund.

The Venture Capital Support Programme (Tech-InvesTR) was established by TÜBİTAK to encourage funds to invest in technology-based early-stage start-ups that will provide added value to the Turkish economy and to develop the venture capital ecosystem.

As seen in successful examples around the world, technology-based early-stage start-ups mostly emerge from universities, research centres and technoparks and are supported by funds established in these institutions for the purpose of investing in technology-based start-ups. The Venture Capital Support Programme (Tech-InvesTR) was established by TÜBİTAK to encourage funds to invest in technology-based early-stage start-ups that will provide added value to the Turkish economy and to develop the venture capital ecosystem. A Cooperation Agreement was signed between TÜBİTAK and the Ministry of Treasury and Finance to ensure the sustainable operation of the programme. Within the scope of the Tech-InvesTR Programme, five funds, three of which were established abroad and two in Türkiye, were established

and started their investments. Five technoparks participated in these funds. It is aimed that at least one staff member from the participating institutions will take part in the activities of the funds and that these people will gain experience in fund management, company valuation, legal proceedings, and commercialisation, among others, and transfer these experiences to the ecosystem. An amount 241 times the size of TÜBİTAK's contribution has been mobilised to invest in technology-based initiatives.

In order to facilitate the commercialisation processes of the outputs of the projects it supports, TÜBİTAK carries out the BİGG+ SME Mentor Interface Programme, which includes mentoring services to increase the business development and innovation capacities of start-ups and SMEs that have benefited from TEYDEB supports in the last 10 years. In the 2022 call opened within the scope of the BİGG+ Programme, 12 of the 18 organisations whose support process continues as Mentor Interface Organisations are technoparks. Within the scope of the programme, technoparks can use their existing expertise and know-how to increase the commercialisation and innovation capacities of SMEs and start-ups, as well as improve their own institutional capacities by working with different mentors and SMEs.

In order to encourage our innovative start-ups and SMEs to open up to the global market by getting more support from the networks and funds that they may need in their internationalisation processes, various awards have been defined to BİGG+ Mentor Interface organisations in proportion to the progress made in the application stages for start-ups and SMEs that they will prepare for the European Innovation Council's Accelerator (EIC Accelerator) Programme. In addition, additional mentoring on sustainability has been provided.

Türkiye Green Industry Project

Are domestic companies that develop commercialisable products as a result of R&D supported by public funds able to compete with large international companies that benefit from economies of scale? What measures have been taken and can be taken to ensure their survival in competition?

Prof. Dr. Orhan Aydın: In this important process, we are providing opportunities for industrial innovation to be upscaled successfully. In this respect, we aim to support the research-technology development and innovation activities of private sector organisations in Türkiye, to support entrepreneurship and university-industry cooperation, and to contribute to increasing the research-technology development capability, innovative culture and competitiveness of the Turkish industry. We design and execute support programmes to direct organisations to research and technology development activities in priority and value-added areas in order to help them become pioneers or followers in global competition.

R&D projects supported by public funds provide an important opportunity to increase the ability to compete with large international companies. The International Industry R&D Projects Support Programme plays a critical role in this regard. The programme aims to increase technical competence and accelerate technology transfer and original technology development processes by encouraging Turkish companies to participate in international projects under Eureka platforms.

The support provided to Turkish companies participating in the Eureka programme stands out as one of the main factors to increase competitiveness. Within the scope of this programme, large-scale companies can receive grant support at the rate of 60% of their project expenditures, while SMEs can receive grant support at the rate of 75%.

Thus, companies can allocate more resources to R&D projects and develop innovative products that can compete with international companies. In addition, platforms such as Eureka Network projects enable Turkish companies to take part in international consortia, thereby enabling access to international know-how and technology transfer. The technological know-how and experience gained as a result of these projects contribute to the development of indigenous technologies by domestic firms and to the commercialisation of these technologies to compete in international markets.

Measures taken include enabling domestic firms to reach the same level with global firms through technology transfer, sharing information and developing joint projects with specialised R&D consor-

tia, and increasing public support. Thematic calls such as applied quantum technologies, mitigation technologies and disaster resilience within the Eureka Network are strategic areas to gain competitive advantage. In addition, prospective studies are being carried out on the Globalstars and Cluster tools to enable domestic companies to take place in international markets.

In the process of transforming the outputs of publicly funded R&D projects into national economic value and enabling innovative companies to achieve and maintain national and international competitive power, it is necessary to carry out company-specific competence and road map studies, to make the right product-market matching, to analyse the deficiencies and to formulate commercia-



12 R&D and Innovation Topics to Increase Our Country's Resilience to Disasters

RDI for Disaster Management (Before, During and After Disaster) (TÜBİTAK, 2024).

lisation strategies accordingly. SMEs and start-ups need to both increase their commercial performance and increase their innovation capacity, which is the basis of their competitive power in the global market. These studies are addressed within the scope of BİGG+ SME Mentor Interface Programme.

Within the scope of the Türkiye Green Industry Project, we support companies engaged in green innovation activities, including the development of new green technologies, products or processes that will take place in Türkiye or other markets, with a budget of 175 million USD within TÜBİTAK.

In addition, we improve the R&D capacity of our SMEs and support our entrepreneurs to transform their ideas into products. We have implemented the Türkiye Green Industry Project to strengthen the productivity and competitiveness of our industrialists, entrepreneurs and SMEs by realising their green transformation. Within the scope of the Türkiye Green Industry Project, we support companies engaged in green innovation activities, including the development of new green technologies, products or processes that will take place in Türkiye or other markets, with a budget of 175 million USD within TÜBİTAK. Technology-based start-up companies, SMEs and large companies, as well as universities, research infrastructures and public research centres, can develop technological solutions focused on green transformation with these supports. We support projects for R&D, prototype development,

standard development and new product or process development that contribute to green production, higher energy and resource efficiency.

In our national R&D and innovation ecosystem, it is also of great importance for large companies with high R&D capabilities to focus on basic research. For this purpose, within the scope of the Support Programme for Frontier R&D Laboratories, the technologies of the future are being developed in frontier R&D laboratories. In the laboratories of Turkish Aerospace Industries (TAI), Arçelik, Turkcell, ASELSAN, BTS Group, KORDSA, General Electric, AVL and Ericsson, research activities are carried out on frontier research topics such as advanced composite materials, additive manufacturing, 6G, artificial intelligence and hydrogen storage and transfer. Thus, our country is moving steadily towards becoming not only a production base but also a country where the technologies of the future are developed.

Monitoring and Evaluation Process of Supported Projects

Can the transformation of the resources spent within the framework of technology roadmaps prepared for priority and key technologies into economic/social benefits be monitored?

Prof. Dr. Orhan Aydın: Technology roadmaps that are determined for priority and key technologies with a view of environmental, economic and social benefits are implemented by a variety of ecosystem actors. As TÜBİTAK, we have also adopted an output and impact-oriented approach in the design and evaluation processes of support programmes with the aim of transforming our R&D and innovation support into technology-oriented products and services.

Within the scope of programmes that support private sector R&D and innovation projects within TÜBİTAK, we meticulously examine the extent to which companies achieve commercial success of the products of their projects previously supported by TÜBİTAK. We have a Commercialisation Monitoring Process to measure the commercial success of companies in their completed projects. Within the scope of the Commercialisation Monitoring Process, when a project is completed, it submits a Commercialisation Plan to TÜBİTAK, and then we receive a Commercialisation Report to evaluate the stage reached 1, 3 and 5 years after the completion of the project in line with the plan submitted. We use the commercialisation success of the supported projects as additional points in the evaluation process of the subsequent project applications of the relevant company.

In addition, we support Technology Platforms and Industry Innovation Networks to develop domestic products that can compete in the international market in cooperation with the private sector and universities instead of high-tech imported products. In this respect, we attach importance to R&D consortium projects with high impact potential and large budgets. In our High Technology Platforms, we prioritise the execution of social impact projects within the platforms, in which the social impact of the developed technologies will be examined simultaneously. We expect the platforms to carry out a detailed analysis of the social impact of the activities to be carried out within the scope of the research programme and the technology-based strategic objectives within the scope of the Technology Acquisition Roadmap, including the social, ecological, cultural, and economic sub-dimensions.

We also have direct output-oriented programmes to respond directly to the needs of end-users. We bring end-users and technology providers together in the same projects through SME support calls for

order-based R&D projects. With TÜBİTAK Patent Licensing calls, we aim to commercialise the patent portfolios of technology providers. In this way, we support projects with high output and significant impact with a commercialisation perspective based on achieving together.

International Cooperation in Science and Technology

Do we have a vision to establish research areas similar to the European Research Area in geographical regions where our country is influential or part of?

Prof. Dr. Orhan Aydın: Efforts are underway to develop scientific and technological co-operation in the geographical regions in which Türkiye has an influence or is part of, which, although not exactly similar to the 'European Research Area', contain similar elements. These initiatives aim to increase Türkiye's effectiveness in these areas by involving joint projects and funding mechanisms that promote regional research and innovation activities.

Within the framework of the Organization of Turkic States (OTS), under the leadership of TÜBİTAK, important steps are being taken to support joint R&D and innovation projects among member states. Adopted in 2021, the 'Vision of the Turkic World - 2040' document envisages the establishment of a financing mechanism to promote scientific and technological cooperation among member and observer states. In this context, it was decided to support multilateral projects in strategic areas such as artificial intelligence and green energy. In addition, the establishment of scholarship and support programmes for the development of qualified human resources is also among these initiatives. In cooperation with the Turkic Academy, we held a workshop with the relevant organiza-

tions of the CIS member countries to identify priority cooperation areas, policies and mechanisms.

Horizon Europe has given experience in the world's highest budgeted public R&D programme where we received 305.6 million Euros of funding in 606 projects. Our researchers took part as coordinators in 47 of these projects. In this context, at the request of the EU Commission, we organise high-level meetings in the field of Science, Research, Technology and Innovation to expand the areas of joint cooperation in the field of research. These meetings and cooperation initiatives were included in the recently announced 2024 EU Progress Report. In order to strengthen international cooperation in the field of R&D and innovation, we held the 2023-2024 Presidency of Eureka, the leading platform for international R&D and innovation cooperation of industry with more than 45 countries as members. More than 2,000 participants, industrial organisations and innovation leaders from more than 47 countries attended the Global Innovation Summit, which we held as part of our Eureka Presidency.

Moreover, Türkiye's role in the PRIMA Programme stands out in scientific cooperation in the Mediterranean region. PRIMA Programme is a platform that supports joint research projects among Mediterranean countries in areas such as water management, agricultural systems and food value chain. Through its active role in this programme, Türkiye contributes to the enhancement of scientific capacity in Mediterranean countries by promoting regional cooperation.

In Southeast Asia, TÜBİTAK aims to strengthen scientific collaborations and promote researcher mobility in the region through multilateral funding programmes such as SEA-EU JFS. In addition, through bilateral calls for cooperation, platforms that enable scientists in the region to work together are developed and projects that increase Türkiye's scientific capacity in this region are implemented.

In the Latin American region, Türkiye is negotia-

ting bilateral co-operation agreements with countries such as Brazil, Mexico and Chile in order to deepen scientific and technological co-operation. In addition to these collaborations, the EU-CELAC Interest Group aims to support joint projects in the region. Türkiye's contribution to research activities in this region includes strategies for strengthening scientific cooperation and realising joint projects.

For the African continent, TÜBİTAK works in line with strategic goals to increase scientific and technological co-operation. Issues such as strengthening the continent's scientific infrastructure, developing human resources and realising joint R&D projects are among the priority targets, and steps are being taken in line with these targets.

Based on the scope of the Belt and Road Initiative, the cooperation of TÜBİTAK with The Ministry of Science and Technology (MOST) of the People's Republic of China, the Chinese Academy of Sciences (CAS), National Natural Science Foundation of China (NSFC), Chinese Academy of Sciences Institutes of Science and Development (CASISD), and Jiangsu Industrial Technology Research Institute (JITRI) are especially important. We have established science and technology cooperation agreements with these institutions. Our most recent joint call has been with CAS with a focus on advanced materials and energy. We look forward to continuing these joint calls actively and supporting a sustainable future. TÜBİTAK is also among the Founding Members of the Alliance of International Science Organizations of the Belt and Road Initiative (ANSO). Our Institution, honoured by this development, was then elected to the ANSO Board of Directors as of January 2022. We will continue to come together with institutions and organisations producing science, technology and knowledge from all over the world, strengthen collaborations for researchers, and continue our science diplomacy activities meticulously. 🌸

Establishing Innovation Systems in the Global South: Challenges and the Path Forward through South-South Cooperation



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ABSTRACT

This paper examines the obstacles and prospects for establishing resilient innovation systems in the Global South. In addition to structural impediments like brain drain, fragile industrial bases, and insufficient legal and cultural frameworks, self-perpetuating polarization along the core-periphery axis and the monopolization of knowledge at the core further constrain these nations' capacity to establish robust science, technology, and innovation (STI) systems. The document underscores the constraints of North-South partnerships, which frequently intensify prevailing disparities, and accentuates the promise of South-South collaboration as a more equitable and sustainable option. Through the sharing of resources, expertise, and experiences, countries in the Global South may augment their innovation ecosystems, propel regional development, and fortify their standings in global value chains. Customized policies, regional collaboration, and fair international alliances are seen as crucial for the sustained success of innovation systems in the Global South. A proposed model delineates a shared research domain wherein players allocate adaptable budgets and comply with a notion of equitable returns within structured frameworks. This strategy could promote efficient and effective South-South scientific and technological collaboration at both regional and global levels. The BRICS STI Framework initiative can act as a significant reference for analogous regional organizations, enhancing their collaborative models via shared experiences and adaptable frameworks.

Keywords: brain drain, Global South, science, technology and innovation policy, South-South cooperation, sustainable development.

Introduction

DEVELOPMENT IS A PRIMARY OBJECTIVE for states worldwide; nevertheless, most of the global population lives in countries typically classified as “developing” or “emerging,” rather than “developed.” Covering extensive regions worldwide and including a significant portion of the global population, these nations have substantial obstacles in attaining the living standards characteristic of industrialized countries. Regardless of

the metric employed to assess development—be it economic indicators like gross domestic product (GDP), social metrics such as healthcare and education, or environmental sustainability indices—a significant number of countries do not qualify as “developed” or “high-income” nations.

For these countries, which include many in Africa, Latin America, Asia, and parts of Oceania, the challenge of development is not just an academic issue but an urgent reality that directly affects the everyday lives of billions of people.

Accelerating development, enhancing quality of life, and balancing environmental sustainability are among the foremost challenges of the 21st century. In response to this pressing need, a collective term, the Global South, has emerged, defined as “all emerging and developing countries, most often located in the Southern Hemisphere and home to approximately 80 percent of the world’s population” (Büyüktanir Karacan & Ruffini, 2023). This term is not merely a geographic reference but also a political and economic one. It has come to represent the grouping of countries that share historical experiences of colonization, economic marginalization, and struggles with development, as well as aspirations for catching up with the more affluent Global North. One can also use the term “Global East” to refer to the same group of countries (Sun & Yang, 2024).

Science, technology, and innovation (STI) systems play a critical role in the pursuit of development. There is widespread consensus among scholars, policymakers, and development experts that economic growth, social progress, and even environmental sustainability depend on the strength of a country’s STI capabilities.

Science, technology, and innovation (STI) systems play a critical role in the pursuit of development. There is widespread consensus among

scholars, policymakers, and development experts that economic growth, social progress, and even environmental sustainability depend on the strength of a country’s STI capabilities. Advanced STI systems drive technological advancements, create new industries, increase productivity, and provide solutions to pressing societal challenges, from healthcare to climate change. In fact, many developed countries owe much of their prosperity to their robust and well-established innovation ecosystems, which have continuously fueled their growth.

For Global South countries, the importance of establishing strong STI systems has never been greater. The world is currently experiencing a period of rapid and profound transformation: supply chains are restructuring, geopolitical dynamics are rapidly shifting, and climate change is presenting unprecedented risks to human societies. These changes create both challenges and opportunities for Global South nations. On one hand, they must contend with new threats, such as disruptions in trade, economic volatility, and environmental disasters. On the other hand, the reconfiguration of the global economy provides opportunities for these nations to integrate themselves more deeply into global value chains and to leapfrog certain stages of development by adopting emerging technologies.

However, the gap between the Global South and the developed countries of the Global North in terms of STI systems is stark. Closing this gap requires not just incremental improvements but the establishment of powerful, highly efficient, and well-coordinated systems of innovation. Moreover, these systems must be resilient and adaptable, capable of responding to rapidly changing global conditions.

Despite these pressing needs, the Global South



The Global South Think Tanks Forum was held on October 16, 2024, in Beijing, China
(Photo: CGTN, 2024).

faces significant obstacles in building such systems. Major challenges include inadequate funding for research and development (R&D), weak institutional capacities, a shortage of skilled professionals, the “brain drain” phenomenon, where talented individuals leave their home countries to seek better opportunities abroad, and most importantly, the monopolization of knowledge. Additionally, many Global South nations struggle with political instability, corruption, and weak governance, which hinder long-term investments in STI infrastructure. Furthermore, the effects of climate change and environmental degradation disproportionately affect these countries, adding

an additional layer of complexity to their development challenges.

Addressing these obstacles requires a multifaceted approach. National governments in the Global South must implement effective policies that foster innovation and scientific progress, but these efforts will not be sufficient on their own. The challenges are too large and too interconnected to be solved solely at the national level. Therefore, international cooperation is essential. Regional and global partnerships can help to pool resources, share knowledge, and coordinate efforts, creating synergies that benefit all parties involved.

This paper thoroughly explores these pressing issues. It begins by examining the hurdles for the establishment of effective STI systems in Global South countries at the national level. Then solutions at the national level are discussed, and it is shown that international collaboration is necessary to support the STI goals of Global South nations. The paper progresses to an analysis of challenges in the international context. Various international organizations that foster international collaboration of Global South countries are listed, and their collaboration models are discussed. Finally, an organization model is proposed for supporting joint projects to strengthen the STI systems and to build the innovation ecosystems they need to meet the challenges of the 21st century.

National-Level Challenges in Building Innovation Systems

Building a strong, sustainable innovation system requires three essential pillars: an educated, skilled workforce; a competitive industrial base; and a robust legal and cultural framework supportive of innovation. Ideally, these elements work in harmony, generating new ideas, transforming them into market-ready products, and embedding them into the economy to create a self-sustaining cycle of growth and development. However, in the Global South, nations face substantial challenges in each of these areas, which severely hamper their ability to develop effective innovation systems.



The 1st Belt and Road Science and Technology Exchange Conference was held in Chongqing, China, on 6-7 November 2023 to strengthen scientific cooperation under the BRI (Photo: Xinhua, 2023).

Workforce Challenges and the Impact of Brain Drain

A fundamental requirement for an effective innovation system is a highly skilled workforce—individuals educated and experienced in science, technology, engineering, and entrepreneurship. Yet, for many countries in the Global South, retaining this talent is an ongoing struggle due to the phenomenon of brain drain, where educated professionals leave their home countries in search of better opportunities abroad, often in the Global North. For decades, scholars and policymakers have debated the consequences of brain drain. Some argue that it can have indirect benefits for the source country, such as influencing policy changes or maintaining global connections that help those left behind (Ernst, 2015). Others propose the concept of brain gain, where the prospect of working abroad motivates young people in the Global South to pursue higher education and develop skills that may benefit the country if they return (Stark et. al., 1997).

However, these arguments offer little solace to countries that invest substantial resources in educating their populations, only to see a significant portion of their most talented individuals leave for better opportunities. The loss of potential scientists, entrepreneurs, and policymakers after years of training in education systems financed through great sacrifice delivers a deep and visible blow to these nations' development prospects. While the gains from brain drain may exist, they pale in comparison to the vast losses incurred, making it clear that this issue continues to be a significant barrier to the creation of an innovation-driven economy.

Weak Industrial Base and Its Role in Innovation Systems

The second major challenge is the weakness

of the industrial base in many Global South countries. In a well-functioning innovation system, industries play a pivotal role not only by creating demand for new technologies and products but also by integrating the results of research and innovation into the broader economy. Industries commercialize innovations, which in turn fuel further research and development. Unfortunately, the industrial sectors in much of the Global South are underdeveloped and often rely heavily on technologies imported from developed countries.

In these regions, industries are frequently geared toward low-cost, labor-intensive production rather than high-tech, innovation-driven sectors. The local industries, which could otherwise be engines of technological advancement and economic growth, are typically too weak to support a national innovation system. They do not generate sufficient demand for advanced technologies, nor do they contribute meaningfully to the global value chains that drive innovation.

Legal and Cultural Barriers to Innovation and Entrepreneurship

Beyond workforce and industrial challenges, the legal and cultural environment in many Global South countries also hinders innovation. A strong innovation system requires laws that protect intellectual property, regulate R&D funding, and promote entrepreneurship. Unfortunately, in many Global South countries, these legal frameworks are either weak or biased. Often, laws are crafted under the influence of multinational corporations, with the primary objective of safeguarding the rights of these firms rather than promoting local innovation.

Moreover, the cultural environment in many of these countries does not traditionally encourage entrepreneurship (Davids et al., 2021) (Adegbile et al., 2021). Many young people are discouraged from pursuing entrepreneurial ventures, either due to societal norms or the high risks associated with starting a business in environments where support systems are lacking. Forje (2009) suggests that colonial histories in many Global South countries suppressed entrepreneurial instincts, creating a legacy in which risk-taking and innovation are undervalued.

In addition to cultural barriers, widespread corruption and nepotism pose serious challenges to building innovation systems. Corruption (Senadjki et al., 2021) (Panagiotakopoulos, 2020) undermines the integrity of institutions, misallocates resources, and creates environments where merit is often overlooked in favor of personal connections. This discourages talented individuals from participating in the system, stifling both competition and innovation. Nepotism further entrenches these challenges, as it promotes favoritism and reduces opportunities for genuine innovators to emerge.

Developing National Innovation Systems: Challenges, Opportunities, and Strategic Approaches

Establishing a robust and sustainable innovation system in the Global South is undeniably a daunting task, fraught with numerous obstacles. These nations face challenges related to brain drain, weak industrial bases, fragile legal frameworks, and underdeveloped research infrastructure. However, while the path forward is difficult, it is not insurmountable. The key lies in designing policies tailored to each country's unique socio-economic and political conditions. Simply transplanting the policies of developed nations into the Global South, as history has shown, is rarely effective (Jauhiainen &

Hooli, 2017) (Jauhiainen & Hooli 2019). Since the Global South countries are heterogeneous among themselves, appropriate policies may vary. However, this paper focuses on the main approaches.

Addressing Brain Drain and Retaining Talent

One of the most pressing issues for innovation systems in the Global South is the persistent outflow of skilled labor to the Global North. Over the years, countries have attempted to combat this brain drain with coercive measures such as mandatory service requirements. Unfortunately, these efforts have often yielded minimal benefits. Yet, recent changes in global dynamics suggest a potential shift. Although countries like Germany (Cerna & Chou, 2023) have introduced policies to attract foreign skilled workers, rising xenophobia, anti-immigrant policies, and economic downturns in Northern nations are beginning to slow brain drain. This reduction in pull factors presents an opportunity for source countries to focus on reducing push factors and make it more appealing for skilled workers to stay.

Retaining talent is less about creating restrictive policies (Marsh & Oyelere, 2018) and more about fostering an environment that offers greater professional satisfaction, fair compensation, and a supportive working atmosphere. For instance, in the case of Greece, Panagiotakopoulos (2020) has shown that the primary factors driving brain drain were not financial but related to governance issues, corruption, and the erosion of social values. Adesoto and Osunkaya (2018) mentioned the absence of jobs where educated people can use their skills as one of the push factors. Korsi emphasized that, alongside standard push and pull factors, social networks and mari-

tal status are increasingly important, suggesting that good governance and the implementation of democratic principles can slow brain drain (Korsi, 2022).

However, these recommendations depend on the overall level of development, which further depends on the innovation system, creating a vicious cycle. While achieving widespread institutional reform to improve the overall innovation ecosystem may take time, creating “islands of excellence” within a country—such as universities, research centers, and technology parks—can provide an

immediate, micro-level solution. These innovation hubs, equipped with better infrastructure, governance, and living conditions, can help slow brain drain and nurture homegrown talent.

Setting the Right Research Priorities

Another crucial factor for the Global South is setting research priorities that align with their specific strengths and developmental goals. Altenburg (2009) suggests that competing with developed nations in high-tech fields is often neither feasible nor advisable.



At the first Belt and Road International Cooperation Forum (BRF) in May 2017, China announced the launch of the Belt and Road Science, Technology, and Innovation Cooperation Action Plan, comprising the Joint Laboratory Initiative, the Science Park Cooperation Initiative, and the Technology Transfer Initiative (Photo: Global Times, 2024).

Instead, focusing on applied engineering and the diffusion of existing technologies might be a more pragmatic approach. In our view, while it is important to build a foundation in these areas, entirely abandoning high-tech development would be shortsighted. Confraria et al. (2017) suggested that a more strategic approach would be to concentrate limited resources on niche fields where the country has a comparative advantage to achieve the critical mass needed to compete globally. As will be explained later, regional cooperation among neighboring countries with similar challenges and goals can facilitate this process. By pooling resources and sharing knowledge, countries in the Global South can overcome limitations in expertise and funding.

Enhancing Collaboration Between Academia, Industry, and Government

A well-functioning innovation system requires close collaboration between universities, industry, and government. The “triple helix” model (Etzkowitz & Leydesdorff, 2000) encapsulates this and emphasizes the critical interactions among these three pillars to drive innovation (Kadhila et al., 2024). Establishing technology parks and government laboratories focused on key sectors can accelerate this collaboration. However, the challenge lies in adapting these models to the unique social, economic, and political conditions of Global South countries. What works in one region might not work in another due to vast differences in governance, resources, and industrial capabilities (Owuondo, 2023).

Therefore, there is no universal blueprint for success. Policymakers must be informed by the successes and failures of similar countries and craft strategies that reflect local realities. International collaboration and knowledge-sharing platforms can play a crucial role here, allowing countries to

learn from each other while customizing approaches to fit their specific needs.

Leveraging Technology Transfer for Innovation

One of the most promising avenues for accelerating innovation in the Global South is technology transfer from more developed nations. This process can occur through formal mechanisms like partnerships, foreign direct investment, and joint ventures, or informally through spillover effects. However, as research from Vietnam shows, technology spillover does not always happen automatically through employee mobility or spin-off firms. Instead, social interactions within knowledge-intensive clusters often play a more significant role (Ngo, 2020). Overall, spillover effects do not emerge as a significant mechanism.

On the other hand, there are successful examples of formal technology transfer. In fact, there are rare cases where entering a particular technology field at a later stage offers an advantage (latecomer advantage) once the technology has reached a certain point (Leloglu 2009). However, successful technology transfer depends on the recipient country’s capacity to absorb and adapt them (Leloglu & Kocaoglan, 2008) (Nasief & Basahal, 2023). Absorptive capacity—the ability of a country to assimilate, improve upon, and commercialize technology—requires skilled human capital, supportive institutions, and a strong industrial base. Without these foundational elements, even the most advanced technologies may fail to take root.

Financing the Innovation System

One of the significant challenges faced by Global South countries in establishing a functional innovation system is the financing of STI support mechanisms. Many of these nations frequently experience



financial crises that strain their fragile R&D support systems. Sudden cuts to R&D budgets can halt progress, disrupt projects, and cause a loss of momentum in building local technological capacities. The financial strain is further exacerbated by policies imposed by international organizations, such as the Washington Consensus promoted by the International Monetary Fund (IMF), which often neglects the role of technological innovation, leading to further damage (Birdsall et al., 2010). Increasing R&D expenditure as a percentage of GDP to levels seen in developed countries (above 2%) is critical for fostering innovation. However, this is only possible through the effective integration of the innovation system into the value chain, which is intricately tied to solving the broader structural problems addressed in previous sub-sections.

Conclusion: An Integrated, Persistent Approach

In summary, the components of a successful innovation system are deeply interconnected, and developing such a system requires a holistic, consistent approach. Countries in the Global South must implement long-term science, technology, and innovation policies that reflect their unique conditions. It is crucial to review the successes and failures of similar countries' policies, adjusting for local conditions, to enhance the efficiency and effectiveness of national systems without wasting time and resources. However, as explained below, it will be more effective to do this through international organizations.

**Issues in International Context:
Imbalance in North-South Collaboration**

International cooperation, particularly between the Global North and South, has long been promoted as a key mechanism for helping developing countries leapfrog in science, technology, and innovation. However reality often diverges significantly from the idealistic vision. Despite the well-intentioned frameworks laid out in many cooperation agreements, the Global South often finds itself in a subordinate position, with its long-term development interests frequently not addressed.

One of the most significant issues in North-South cooperation is the unequal distribution of benefits. At first glance, such collaborations seem to offer

resources and knowledge transfer from more developed nations to the Global South. However, they frequently lead to a loss of critical talent from the South as skilled workers migrate to the North for better opportunities. The South also tends to be confined to basic scientific research that supports applied research in the North without gaining the skills or infrastructure needed to advance its own technological capabilities. This dynamic reinforces a cycle where the Global South becomes a consumer of Northern technologies rather than an independent creator or innovator (Gomes, 2023).

Moreover, many of these collaborations, especially in the form of research projects, often fail to empower local researchers. The phenomenon of “helicopter research” is particularly problematic,



“The monopolization presents a significant challenge for Global South countries attempting to build their innovation systems”
(Cartoon: CGTN, 2019).

where Southern researchers are used primarily to conduct field studies without any significant transfer of skills or knowledge. This type of collaboration leaves little lasting impact on local scientific capacity and reinforces the dominance of Northern researchers and institutions (Büyüktanir Karacan & Ruffini, 2023). A study by Szczygielski et al. (2017) on EU funding showed that while domestic government research supports were effective in fostering innovation in less developed countries, external EU funds were often less effective and sometimes even hindered innovation. Given the greater power imbalance in North-South cooperation, it is reasonable to assume that the negative impact is even stronger in such cases.

Sometimes the nature of the collaboration is explicitly stated in policy documents of the North. For example, an expert group tasked with elaborating on the cooperation strategy of the EU in the field of STI has reported the objectives of priorities as supporting the competitiveness of the Union, dealing with societal challenges, and backing EU external policies (Serger and Remøe, 2012).

Monopolization of Knowledge and Technology

Today's world is divided into two poles, the core and the periphery, as suggested by Wallerstein (2020). The core nations, monopolizing capital-intensive production, produce and sell high-tech products to the periphery, while the periphery supplies raw materials and inexpensive labor to the core. This self-reinforcing imbalance extends to knowledge itself, which remains concentrated within the core, amplifying the disparity between the two. Hence, a growing concern in the realm of international cooperation is the monopolization of knowledge (Rikap, 2023) (Nathan, 2024). As ad-

vanced technologies increasingly become concentrated in the Global North, particularly within multinational corporations, the disparity between the technological capabilities of the North and South continues to widen. The rise of artificial intelligence and multinational-owned data centers has accelerated this trend. These corporations now control vast amounts of data, resources, and infrastructure, making it even more difficult for countries in the Global South to compete or even participate meaningfully in global innovation systems.

This monopolization presents a significant challenge for Global South countries attempting to build their innovation systems. In the past, some countries were able to catch up through strategic investments in R&D and technology transfer. However, as cutting-edge technologies become more centralized and proprietary, it has become increasingly difficult for countries in the Global South to establish their own innovation systems, integrate into global value chains, and elevate their economies when compared to the past.

South-South Cooperation

The growing complexity of global economic and technological systems has made it increasingly difficult for individual countries in the Global South to develop independent innovation systems and compete with powerful multinational corporations and the North in general. This has prompted many countries to turn toward South-South cooperation, a strategy based on mutual support and shared development goals among developing nations. Such cooperation offers a viable path for pooling resources, sharing knowledge, and building capacity, especially in fields like science, technology, and innovation.

Table 1. International organizations aiming to build capacity in STI in mainly the Global South

Type	Main Organization	Organization Type	Sub-Unit	Funding for Capacity Building
Global	The United Nations	International organization based on treaty	Economic and Social Council (ECOSOC) Commission on Science and Technology for Development (CSTD)	No funding. Advisory body
Global	The United Nations	International organization based on treaty	Office for South-South Cooperation (UNOOSC)	No funding. Provides advice and consulting
Regional	Asia-Pacific Economic Cooperation (APEC)	Informal international organization. Members are 'economies' rather than countries	Senior Officials' Meeting (SOM) Steering Committee on Economic and Technical Cooperation / Policy Partnership for Science, Technology and Innovation (PPSTI) Working Group	Capacity building or research projects are funded APEC Support Fund other sources
Inter-Regional	Forum for East Asia-Latin America Cooperation (FEALAC)	Informal international organization	Science, Technology, Innovation, Education Working Group	Regional projects are self-funded by contributing countries, FEALAC-wide Projects are funded by the FEALAC Multi-donor Trust Fund (Projects are not necessarily on STI)
Regional	The Association of Southeast Asian Nations (ASEAN)	Supranational union	Committee on Science, Technology and Innovation (COSTI)	Projects are funded by the ASEAN Science, Technology, and Innovation Fund and other funds. Multilateral projects are self-funded by contributing countries
Regional (continental)	African Union (AU)	International organization based on treaty	Specialised Technical Committee on Education, Science and Technology / Education, Science, Technology and Innovation (ESTI) Department	Establishment of African Science and Technology Innovation Fund (ASTIF) is recommended in Science, Technology and Innovation Strategy for Africa 2024 (STISA-2024)
Regional	Southern African Development Community (SADC)	International organization based on treaty	The Protocol on Science, Technology, and Innovation	The protocol defines mechanisms but no information on the implementation was found
Regional	East African Community (EAC)	International organization based on treaty	East African Science and Technology Commission (EASTECCO)	East African Research and Technological Development Fund has recently started funding projects
Regional	Organization of the Bleak Sea Economic Cooperation (BSEC)	International organization based on treaty	Working Group on Cooperation in Science and Technology	Projects can be funded by BSEC Project Development Fund that depends on voluntary contributions
Regional	East Asia Summit (EAS)	Informal international organization	The East Asia Science and Innovation Area Joint Research Program (not directly affiliated to EAS)	Member Organizations of each country (three or more) participating in the call fund their own researchers in a co-funding process
Regional	Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC)	Informal international organization	Science, Technology & Innovation Sector of Cooperation	A technology transfer mechanism is being established to be funded by the members
Global (South)	BRICS	Informal international organization	BRICS STI Framework Programme (BRICS STI FP)	Large number of projects are funded. Multilateral projects are self-funded by contributing countries

Many international organizations focus on capacity building in STI, primarily within the Global South (Table: Leloğlu, 2024).

Bilateral Cooperation

There are numerous examples where a relatively resource-rich country in the Global South has engaged in extensive bilateral cooperation with multiple countries. For example, Simelone (2023) highlights the outcomes of South Africa's bilateral collaborations with many countries. However, challenges such as the lack of infrastructure in African countries, the focus of university personnel on education due to insufficient funding, and brain drain have been identified. Models centered around a single country in star topology, by their nature, tend to offer suboptimal solutions.

India, in addition to its bilateral cooperation programs with African countries, also has a broader program aimed at the African continent (Sharma & Varshney, 2023). Although scholarships and educational programs aimed at building capacity in Africa are beneficial for those countries, multilateral programs could be even more helpful in capacity building. On the other hand, India is also involved in scientific and technological cooperation within the framework of regional organizations such as the Association of Southeast Asian Nations (ASEAN) and the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC).

Similarly, Liu et al. summarize the science and technology cooperation under China's Belt and Road Initiative (Liu et al., 2023). From 2016 to 2021, China's Ministry of Science and Technology implemented over a thousand projects, focusing on human exchange, joint laboratories, science and technology parks, and technology transfer. The Ministry of Education has developed educational cooperation, and the National Natural Science Foundation of China supported nearly 1,000 projects between 2016 and 2022. Additionally, the Chinese Academy

of Sciences (CAS) established the Belt and Road Alliance of International Scientific Organizations (ANSO). Although this large-scale initiative has led to significant capacity development within the framework of South-South cooperation, it still faces some of the same challenges as the examples mentioned earlier.

Regional Organizations as a Pathway for Growth

A second category of cooperation occurs within the framework of regional organizations. Many international organizations focus on capacity building in STI, primarily within the Global South.

Table 1 provides a non-exhaustive list of these organizations.

Unfortunately, few reports assess the effectiveness or efficiency of these organizations, making it challenging to compare various organizational models. For instance, Ridley and Offiong (2022) evaluated the Science, Technology, and Innovation Strategy for Africa 2024 (STISA-2024), which was adopted by the African Union (2014). In their assessment of the first five years of STISA-2024, Ridley and Offiong (2022) noted that many African countries had developed STI policies, that financial resources had diversified, and there was a significant increase in publications and patents. Additionally, they observed a rise in large companies and start-ups. However, they also pointed out that only a few countries made significant progress, while some countries had fallen further behind, innovation and entrepreneurship were concentrated in just a few centers, and most funding came from outside Africa. They emphasized the need to learn from similar initiatives on other continents.

Some organizations start as coordination or advisory bodies, helping members develop their STI policies; they then start mechanisms for funding joint projects.

Some less formal models coordinate the project with partners financed by their respective scientific funding organizations, whereas the more robust models establish a common fund to support projects competitively. Strong models, similar to the European Union Framework Programmes, will probably have the maximum effectiveness. However, such models may not be affordable for countries with very limited resources, and they might not have a share of the projects proportional to their funding. Hence, a structured but flexible model is necessary for the funding of joint projects.

In the literature, a model has been proposed for regional organizations (Leloglu, 2021). This model suggests defining a common research area where participants contribute with flexible funding and follow a fair return principle, all within formal mechanisms. This could create efficient and effective scientific and technological cooperation at regional or global levels. Among the organizations listed in Table 1, the BRICS STI Framework Programme (BRICS STI FP) is the closest model. With a growing number of members, BRICS is well-positioned to play a leadership role in this regard, offering a platform for the Global South to come together and address shared challenges in a coordinated manner. BRICS could also assume the role to facilitate collaboration between regional organizations, share best practices, and promote the exchange of knowledge and resources.

Additionally, the creation of thematic organizations like the Asia-Pacific Space Cooperation Organization (APSCO) (Yan 2021) should be encouraged. The key point here is to have rules of engagement for funding from the start. Such structures, with balanced participation, can prevent the emergence of the same inequalities seen in North-South relations within South-South relations, as Jouili warns about (Jouili, 2021).

Conclusion

The challenges facing innovation systems in the Global South are multifaceted, including insufficient funding, inadequate infrastructure, unequal power dynamics in international cooperation, and monopolization of knowledge and technology by developed countries. North-South collaborations, while intended to spur growth in developing regions, have often perpetuated existing imbalances, limiting the autonomy of the Global South in establishing self-sustaining innovation systems. However, South-South cooperation offers an alternative, more equitable pathway for shared growth and mutual capacity building.

By pooling resources, fostering regional and multilateral partnerships, and building collective capacity in science and technology, countries in the Global South can strengthen their innovation ecosystems. Numerous international organizations—spanning regional and global scopes—aim to strengthen STI capacity in these countries, though it remains difficult to compare the effectiveness of their organizational models and policies. A discernible pattern has emerged where these organizations frequently evolve from being coordination bodies or advisory entities to supporting R&D projects with direct funding, thereby driving greater impact. The BRICS STI FP is among the most advanced models of South-South STI collaboration, having achieved substantial progress in fostering joint research initiatives and technology transfer across BRICS countries. The success and lessons learned from BRICS STI FP serve as a valuable reference point for similar regional organizations, which could improve their collaboration models through shared experiences and adaptable frameworks.

To create a sustainable and competitive innova-

tion environment, countries in the Global South must continue to develop resilient, integrated innovation systems. This involves adopting a structured but flexible model of funding and collaboration, as well as building infrastructure that can withstand global market pressures. Ultimately, achieving a more balanced global innovation landscape will empower the Global South to compete on a global scale and promote sustainable, inclusive development across the region. 🌸

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Tsinghua University Faculty Member

Prof. Dr. Li Guitao*

**“The Belt & Road is the Only Way
‘to Format Human Society’ in the Lead of
the Developing World”**



**Li Guitao received his PhD degree from Tianjin University. He worked as a postdoctoral research fellow at Tsinghua University. He is currently a faculty member at Tsinghua University Research Institute and the School of Aerospace Engineering.*

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“Currently, the productive forces and relations of production, along with the economic base and social superstructure, have transitioned into a new historical phase of transformation that significantly surpasses the intensity of the Europe-centered industrial revolution. The globe is undergoing a comprehensive transformation of the superstructure and economic foundation, characterized by fragmentation and reorganization. As the superstructures of nations undergo transformation, an exceptionally vigorous formatting process has commenced, particularly regarding the material foundations underlying economic conditions and social structures. Following an extensive developmental phase, human society has arrived at a novel historical juncture and is commencing an unparalleled self-revolution. I refer to this as the process of ‘formatting human society.’ The BRI is the only way to build a ‘process of formatting human society’ led by developing countries. The scientific and technological cooperation issues of the BRI can undoubtedly only be realized under the premise of ‘formatting human society.’ To this end, the developing countries along the BRI must become an organically integrated whole in terms of science and technology. We must proactively identify global subjects in science and technology innovation and robustly promote enhanced international exchanges among universities and research institutes, cultivating an environment that values knowledge and creativity.”

**Li Guitao from Tsinghua University answered
Necati Demircan's questions.**

What are the driving forces behind science and technology policy in our era?

Prof. Dr. Li Guitao: From the early stages of primitive productivity to the fishing and hunting civilization, the nomadic civilization, the agricultural civilization, and so forth, human civilization progressively changed over time, according

to the history of human growth. In every era, the development of science and technology has been guaranteed by the ongoing increase in productivity. Productivity and the scientific and technical revolution have bolstered one another in contemporary times. Cultural mingling and economic globalization have emerged as recent historical phenomena.

The most profound changes in human society's material existence have occurred throughout the past 200 years. Humans' unrelenting ability to modify the physical cosmos and their unchecked ability to transform themselves are the two distinct material forces responsible for these developments. If we look at it negatively, we may see that these two powers have the ability to harm the biosphere and progress in their attempts to subjugate one another.

The economic globalization spearheaded by developed nations has resulted in numerous issues rather than fostering inclusive development, exacerbating wealth disparities by enriching the affluent and impoverishing the destitute, thereby widening the chasm between developed nations and developing countries, as well as the divide between the wealthy and the impoverished within developed nations.

Beginning in the 1990s, the swift advancement of industrial, commercial, and cultural globalization enabled substantial trade and investment, broad human migration, and the widespread dissemination of technology, hence accelerating global progress. Nonetheless, the economic globalization spearheaded by developed nations has resulted in numerous issues rather than fostering inclusive development, exacerbating wealth disparities by enriching the

affluent and impoverishing the destitute, thereby widening the chasm between developed nations and developing countries, as well as the divide between the wealthy and the impoverished within developed nations. For the first time in history, humanity confronts a decision between existence and non-existence, necessitating a thorough historical analysis of this pivotal moment.

Currently, the productive forces and relations of production, along with the economic base and social superstructure, have transitioned into a new historical phase of transformation that significantly surpasses the intensity of the Europe-centered industrial revolution. The globe is undergoing a comprehensive transformation of the superstructure and economic foundation, characterized by fragmentation and reorganization. As the superstructures of nations undergo transformation, an exceptionally vigorous formatting process has commenced, particularly regarding the material foundations underlying economic conditions and social structures. This technique involves deconstructing and recreating the attributes of individuals and the foundational structures of their civilizations from the ground up. The essential material conditions for human survival, including resource ownership, subsistence means, health assurances, and production capabilities, have become increasingly monopolized, resulting in a predetermined routine dictated by a limited number of brands and styles throughout individuals' lives. The dietary habits, attire, possessions, visual experiences, auditory perceptions, and cognitive processes of individuals in each country and location are solely for the purpose of working on and executing the business plan.

Strategic science and technology refers to innovations that can significantly influence

productivity and production dynamics across all sectors of society. For instance, information technology, semiconductor technology, global positioning system technology, railway construction technology, and thermal power plant technology. This strategic science and technology can offer universal support for all productive forces or the system of relations of production inside society, enhancing the advancement and development of the entire society. The capacity to influence societal structure on a grand scale signifies, primarily, that the prevailing irrational social framework can be entirely dismantled, while concurrently, a new overarching framework can be established to benefit the majority of individuals.

The monopolistic influence of industrialized nations changes individuals and their societies, tailoring the emerging social ecology to align with their goals. Regardless of whatever faction possesses the authority to implement restructuring today, it will necessitate a comprehensive transformation of the social and natural attributes of individuals. The rationale for this is that the advancement of productive forces has attained a historical inflection point, necessitating humanity's acceptance of a novel and unparalleled epoch. Despite the capacity of productive forces to secure basic rights for all individuals globally, a significant portion of the population is experiencing a decline in rights and guarantees, including education, reproductive rights, survival, healthcare, housing, and the right to perpetuate future generations. Our generation is tasked with establishing production and infrastructure relations that align with the existing economic framework and productivity levels to guarantee that all individuals are afforded the rights to survival, dignity, and freedom. Consequ-

ently, the present endeavor for the right to social reconstruction is imperative; it is a fight for the right to exist in the future.

We are in an era characterized by the formation of social organizations. Monopolistic entities have usurped the authority to influence human society and have transformed all of humanity. The endeavor to control the formation of individuals and society is an unparalleled economic policy objective and strategy. Simultaneously, it represents the pinnacle of humanity's contemporary political, economic, and technical challenges.

A New Era of Historical Change and Social Formation

What model and collaborative framework are being delineated within the context of the Belt and Road Initiative concerning science, technology, and innovation policies?

Prof. Dr. Li Guitao: To address this inquiry, it is essential to comprehend the “Community of Shared Future for Mankind” and the extensive historical context of the Belt and Road Initiative (BRI) introduced by Xi Jinping. What are the historical antecedents to the “Community of Common Destiny for Mankind” and the “Belt and Road Initiative”?

Comprehending the historical relevance of the BRI will inherently elucidate the shared historical mission of all pertinent nations. The BRI is the only way to build a “process of formatting human society” led by developing countries. The scientific and technological cooperation issues of the BRI can undoubtedly only be realized under the premise of “formatting human society.” To this end, the developing countries along the BRI must become organically integrated whole in terms of science and technology.

Such a unity would not only enable each country to fully realize its own strategic goals of scientific and technological development but could also build a common international environment that would benefit all countries.

Diverse shopping, social media, cultural, artificial intelligence, material production chains, communication, and logistics platforms have transcended traditional industry boundaries, reshaping the organizational and material structure of society into a novel form of integrated and globalized power.

Following an extensive developmental phase, human society has arrived at a novel historical juncture and is commencing an unparalleled self-revolution. I refer to this as the process of “formatting human society.” The phrase “generalized formatting of society” denotes the process whereby a particular social group, driven by its immediate interests, coercively and thoroughly alters a specific societal category, obliterating its inherent structure and organization, stripping it of its original operational mechanisms, functions, and even the essence of its existence and developmental significance. Developing an altogether novel composition, structure, and operational mechanism for these, ultimately ensuring that their purpose and developmental significance fully benefit the social group. The extensive creation of society markedly differs from prior social change and transformation efforts. The scale is delineated as follows: The focus of its trans-

formation encompasses a complete region, an entire nation, or even a particular section of the globe. The organizational characteristic is as follows: It is significantly monopolized, governing the defining element of a certain platform or a single private authority. The functional characteristic is as follows: Once formed, a specific type of social entity will serve the social group that possesses the authority to develop it. The ecological characteristics are as follows: Internal resources and external conditions have been restructured cohesively.

In the current historical epoch, the conventional attributes of many organizational structures are undergoing swift transformation. Diverse shopping, social media, cultural, artificial intelligence, material production chains, communication, and logistics platforms have transcended traditional industry boundaries, reshaping the organizational and material structure of society into a novel form of integrated and globalized power.

Since the advent of industrial civilization, humanity has emerged as a geological force influencing worldwide topography and Earth’s evolution. The influence of human endeavors on the Earth’s surface, atmosphere, and near-space environment parallels that of natural phenomena. Scientists are converging on the notion that a new geological epoch, termed the “Anthropocene,” may soon be incorporated into the official geological time scale. The evolution of human society has transformed the natural world and humanity in an unparalleled manner.

Generally, the concept of the science and technology system, its behavior, and its primary structure will inherently “evolve.” All associations and extensions of the science and technology system are being irrevocably reshaped by historical currents, whether consciously or unconsciously. This alteration represents an unparalleled metamorphosis in



“Developing countries along the BRI must become organically integrated whole in terms of science and technology”
(Illustration: China Daily, 2024).

the annals of human research and technology, marked by the emergence of internal contradictions in reaction to abrupt external shifts, a quantitative surge coupled with a qualitative advancement. Consequently, it will redefine the power dynamics for the forthcoming generation of society. This conflict pertains not to particular technological advancements, ingenuity, or financial matters but rather to the allocation of authority in redefining future society between developed and developing nations, the possession of pioneering scientific and technological innovation, and consequently, the determination of the beneficiaries of science and

technology. The system dictates the character of the struggle to redefine power, therefore influencing the outcome and long-term ramifications of this conflict, as well as the extent to which society is transformed for the benefit of the majority.

If wealthy nations and huge corporations are permitted to acquire supreme control in science and technology, they will prioritize these fields above all else, relegating the societies of developing countries to mere economic considerations. Monopolistic power influences individuals and the society they establish, creating a new social ecology aligned with its own goals.

Upon their success, “impoverished individuals” will be compelled to comply. The biological and social importance of the majority of individuals’ existence comprises “sub-organisms” within the “metacosmic zoo,” governed by monopolistic forces, akin to the manner in which European invaders formerly confined individuals of different races for amusement. This aptly illustrates the adage, “The greatest wealth of the affluent is the impoverished.” Regardless of which faction acquires the authority to reconstruct in the contemporary world, they must entirely restore the social and natural attributes of the populace. Advanced productivity has achieved a historical milestone, necessitating that individuals embrace an extraordinary new era.

The dominance of global monopolistic forces over humanity has surpassed conventional territorial boundaries, religious rights, cultural obstacles, and biological characteristics.

The future encompasses an epoch of parallel universes in which individuals and their data are concurrently assimilated into both the physical and digital realms. Simultaneously, human society and the natural environment have been amalgamated into a cohesive entity. The integration of human social productivity, relations of production, the economic basis and superstructure, social rights, and political power has formed a cohesive entity. In conclusion, all facets of human society, including politics, economy, law, culture, military, agriculture, and industry, have been amalgamated into a cohesive entity. The dominance of global monopolistic forces over humanity has surpassed conventional territorial boundaries,

religious rights, cultural obstacles, and biological characteristics. Monopolistic oligarchs exert direct influence over various aspects of individuals’ lives, including genetics, sleep duration, dietary options, lifestyles, familial wealth, reproduction, and values. Monopolistic entities have appropriated humanity’s scientific and technological advancements, thereby infiltrating the relations of production, social dynamics, and ideologies of the oligarchs into the lives of all individuals and the fabric of human social interactions.

The swift integration of human society is propelled by science and technology. Initially, disparate domains have identical mathematical logic and structural composition. Similar to numerous general-purpose chips, there may exist only one or two manufacturers, and diverse software operating systems must likewise select from the few remaining monopolistic goods. In the domain of the internet, only a limited number of social platforms persist. In every location, there exist only a limited number of communication producers, with merely two or three companies supplying seeds for each grain kind. Simultaneously, the essential forces governing social ideology and the superstructure are converging. Essential information and foundational historical facts are being reconfigured, resulting in catastrophic outcomes. Individuals are compelled to utilize the identical search engine, the same problem analysis software, the same information assistance, and the same fundamental educational materials, logic, and concepts. The values of a minuscule number of powers have entirely captivated the thoughts of individuals globally. Consequently, it is evident that the populations of developing nations and the impoverished in industrialized countries must assert their entitlement to redefine human society, securing their right to continue their existence and foster development.

General Framework of Science and Technology Cooperation in the Belt&Road

What should be the overarching framework of a science and technology system that addresses the collective interests of developing nations?

Prof. Dr. Li Guitao: Initially, the design and construction of the Global South's science and technology system should promote and implement the principles of open, equitable, transparent, and non-discriminatory international scientific and technological collaboration. They must adhere to the principle that "science knows no boundaries and benefits all humanity" and collaborate to establish a global community of science and technology by upholding specific tenets such as promoting science, fostering innovative development, encouraging open collaboration, ensuring equality and inclusivity, and facilitating solidarity, cooperation, and mutually beneficial partnerships.

Within the context of the collective science and technology framework for emerging nations, the subsequent components ought to be incorporated:

The primary concept is the ownership of the rights to the shared technological system. The authority to design, construct, and utilize the system should no longer reside with multinational monopolies; it ought to revert to developing nations.

2. In the production and residential sectors of the emerging world, it is imperative to maintain the cohesive design and distribution of the scientific and technological formatting process, thereby establishing a common technological framework for the production, living facilities, and resources across diverse nations.

Developed nations introduced ideological conflicts into science and technology, advocating for the establishment of "high-walled small cour-

tyards," which significantly impede international exchanges and cooperation in these fields, as well as the movement of innovative resources, thereby exacerbating the global development and innovation disparities. To counter the monopoly of science and technology in industrialized nations, strategies must be devised to structure the science and technology system via a coordinated division of labor among countries. China has released the "International Science and Technology Cooperation Initiative," advocating for the establishment of a global science and technology community through international collaboration.

The establishment of the science and technology framework for the Global South, or emerging nations, must be approached appropriately by considering the prevailing national, religious, cultural, regional, economic, and resource-related interests of these countries.

We must develop a talent training system that aligns with future requirements, nurture our own qualified scientific and technical teams, and genuinely establish a collective scientific and technological capability that belongs to the citizens of these nations. The pertinent strategic issues to be addressed include: the dissemination of information acquired from electromagnetic spectrum observatories in Earth's orbit; the exchange of global navigation, timing, and positioning services; the international system for sharing agricultural animal and plant species; the global media resource sharing framework; the worldwide system for sharing traditional cultural heritage and development; the global social communication and interaction sharing network; the international energy sharing system; the global environmental monitoring and protection sharing framework; the global health system sharing network; and the global transportation and logistics sharing system.

In accordance with the objectives delineated in the Belt and Road Action Plan on Science, Technology, and Innovation released by China in May 2017, China and the founding partner nations will establish international science and technology standards, co-own intellectual property rights, and construct joint laboratories along the Belt and Road to execute the principle of collaborative strategy and develop a cohesive framework for science and technology. Collaboration in industrial development will enhance cooperation and showcase multidisciplinary technology transfer within collaboratively constructed science and technology parks; China will establish transnational technology transfer centers for ASEAN, Arab nations, Africa, and other regions, thereby creating a comprehensive technology transfer network with various countries to support the industrial advancement of each nation.

By establishing cooperative mechanisms, the pertinent entities of nations involved in the construction of China and the BRI countries will collaborate to facilitate infrastructure development through interdisciplinary scientific research, enhance the integration of diverse civilizations, safeguard and cultivate human-inhabited territories, preserve and augment civilizational achievements, and ensure the protection of cultural heritage and biodiversity.

The Belt and Road Initiative is congruent with the United Nations (UN) 2030 Agenda for Sustain-

able Development. It adheres to the trajectory of synchronized advancement of the economy, society, and environment. It seeks to eradicate the underlying causes and barriers that impede progress. The program enhances the internal impetus for the autonomous development of partner nations and fosters sustainable and inclusive economic growth across all countries. It incorporates the principle of sustainable development into all facets, including project selection, execution, administration, and related domains. It seeks to conform to advanced international regulations and standards, establish a high-caliber free trade zone, enact policies for enhanced trade and investment liberalization and facilitation, guarantee the seamless, secure, and orderly movement of individuals, goods, capital, and data, attain elevated connectivity, and foster deeper exchange and cooperation. By establishing cooperative mechanisms, the pertinent entities of nations involved in the construction of China and the BRI countries will collaborate to facilitate infrastructure development through interdisciplinary scientific research, enhance the integration of diverse civilizations, safeguard and cultivate human-inhabited territories, preserve and augment civilizational achievements, and ensure the protection of cultural heritage and biodiversity.

Furthermore, according to the overarching framework, the subsequent objectives can be delineated: “To establish a comprehensive industrial chain that underpins the science and technology system, and to collaboratively develop innovation hubs through corporate partnerships, pilot technology development and transfer centers, and joint product trial production facilities across diverse fields and sectors.

“Concentrating on prevalent challenges like climate change and public health while enhancing collaborative scientific and technological rese-



“Enhancing global science and technology governance is essential for the betterment of humanity’s welfare” (Illustration: CGTN, 2018).

arch and development among enterprises across different nations. To assess opportunities for new scientific and technological revolutions and industrial transformations, to broaden cooperation in fields such as artificial intelligence, life sciences, green energy, and advanced manufacturing, and to advance the development of big data, cloud computing, and smart cities, thereby facilitating the transformation and enhancement of industries across various nations. In the collaborative development of the Belt and Road Initiative, regulations and standards endorsed by all stakeholders are being implemented for project conception, operation, procurement, bidding, and other components, while high-standard cooperation is being fostered across multiple domains.

“By comprehensively leveraging the scientific and technological academic resources and institu-

tional capabilities of each nation and by offering coordinated resources and assistance, to establish a standardized system for scientific and technological academic innovation and exchange.”

Enhancing global science and technology governance is essential for the betterment of humanity’s welfare. We must earnestly endorse multilateralism, advocate for the creation of regulations founded on comprehensive involvement and consensus, enhance intellectual property protection, and resist information blockades and the contrived expansion of the science and technology divide. We must proactively identify global subjects in science and technology innovation and robustly promote enhanced international exchanges among universities and research institutes, cultivating an environment that values knowledge and creativity. 🌸

The Objective of Worldwide Leadership in Science and Technology for the Emerging New Civilization



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ABSTRACT

The collective acquisition of scientific and technological knowledge by humanity will represent a substantial advantage of the forthcoming new civilization over the imperialist-capitalist system. Neoliberalism, on one hand, constricts the domain of objective reality by asserting that individuals possess their own realities, while on the other hand, it commodifies science, diminishing scientific knowledge to a resource accessible only to those who can purchase it. The execution of the national science agenda necessitates thorough planning that encompasses both long-term and medium-term strategies. Effective central planning and its efficient execution can only be realized under state leadership. Advancements in science and technology necessitate a proficient staff and the construction of suitable institutions equipped with cutting-edge equipment and laboratories. Consequently, contemporary scientific endeavors exhibit a significantly more collaborative character than those of the past. The foundational role of science in relation to technology, and technology in relation to innovation, can only be realized through the formulation of long-term strategies rather than relying on market forces to define these connections. The contemporary world necessitates an equitable and fair international order, while the scientific community demands a novel framework for international science governance that seeks to advance research for the collective good of humanity and utilize it as an instrument for future development. A new order can only be established when the emerging civilization attains a global leading role in science and technology.

Keywords: fair international order, neoliberalism, public goods, scientific cooperation in the Global South, science, technology, and innovation policy.

Introduction

Currently, the center of weight of production has transitioned from the West to the East. Since the 1990s, this process has intensified, coinciding with the shift of our globe from unipolarity to multipolarity. The conflict between the Atlantic System, spearheaded by the USA, and the Oppressed-Developing World continues to sharpen across military, economic, political, and ideological dimensions. This process has caused the deepest rifts within the United States since the American Civil War. The issue extends beyond the mere re-

location of the center of industry on Earth. The Developing World, which got born from within the Oppressed World, is now spearheading the formation of a novel social system that offers alternatives to the imperialist framework throughout all facets of life. The current phenomenon is the emergence of a novel civilization from Asia, representing oppressed nations. Consequently, the matter represents an existential challenge to the imperialist system. Furthermore, the emerging civilization represents a potential initial phase toward a classless society in which all forms of exploitation are to be eliminated.

New civilizations emerge from revolutions that fundamentally alter all facets of life. The construction and growth of a new socio-economic order are contingent upon the adoption of a new value system. A revolution cannot occur without embodying a novel worldview, or, in other terms, there is no revolution devoid of philosophical underpinnings. Science and art hold a pivotal position in this new value system, alongside philosophy.

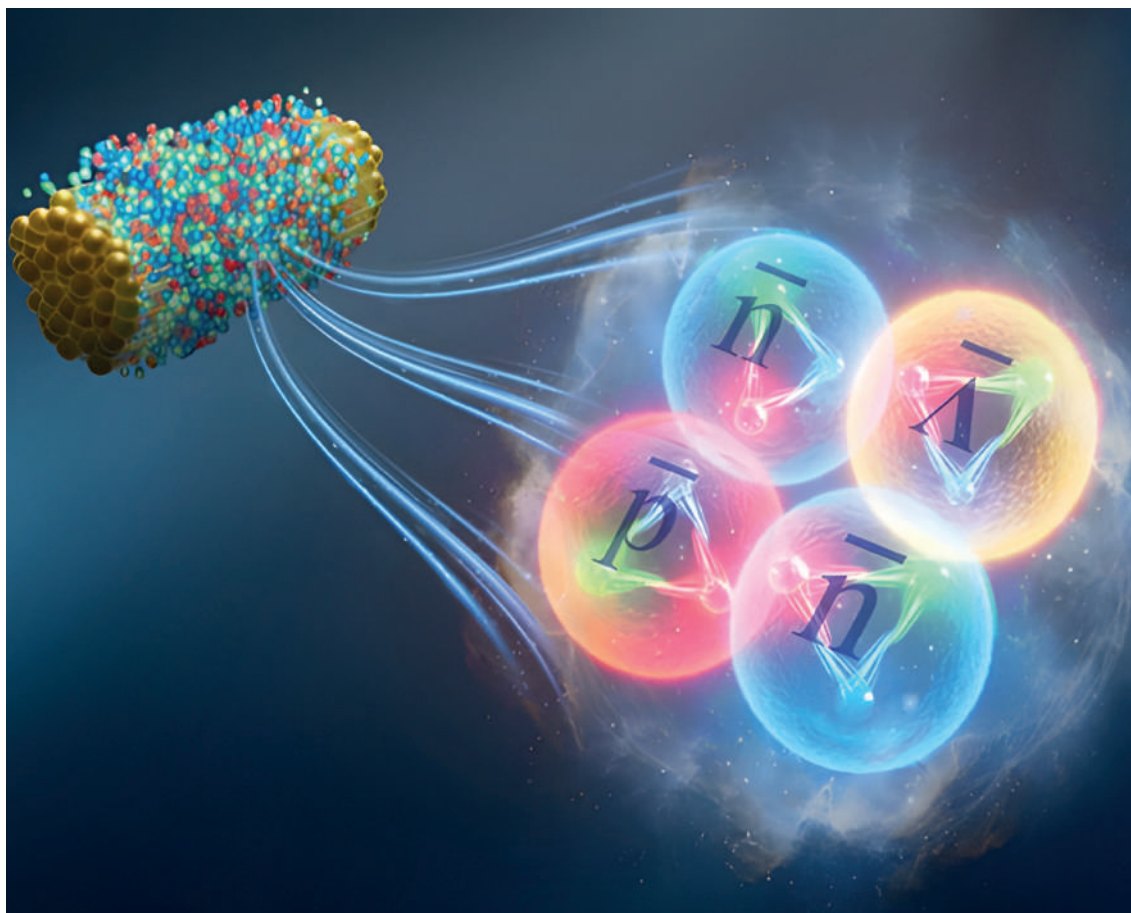
The more luminous the future to be constructed, the more intense this aspiration grows. As the pathway to constructing the future becomes more evident, human cognitive and emotional capacities increasingly concentrate on the objective. Future construction knowledge is acquired through scientific inquiry. Science is for constructing the future.

Similar to all natural processes, historical processes necessitate an energy source. Humans are the source of energy in history. Human energy is therefore the most significant form of energy in terms of social development. The assessment of a social system's advancement is its capacity to uncover and harness the latent potential of society. An obsolete system, having depleted all its contributions to human advancement, focuses solely on preserving its supremacy by perpetuating the status quo, so attempting to suppress social dynamism. It seeks to marginalize the human source of energy, relegating them to the perimeter of

society rather than positioning them at the core of life. The prevalent characteristic of emerging civilizations throughout history has been their capacity to relocate humanity to the center of life. For the emergence of a new civilization requires the transformation of social life. To do this, societal energy must be unleashed and channeled towards appropriate objectives.

The primary catalyst for energizing a human being is the aspiration to construct the future. The more luminous the future to be constructed, the more intense this aspiration grows. As the pathway to constructing the future becomes more evident, human cognitive and emotional capacities increasingly concentrate on the objective. Future construction knowledge is acquired through scientific inquiry. Science is for constructing the future. On the other hand, it is enthusiasm that empowers an individual to release her full potential. Art, by eliciting this enthusiasm, fortifies the resolve to construct the future. Consequently, science and art have a pivotal role among the essential instruments of the revolution.

When the social system becomes reactionary and impedes social progress, science, art, and philosophy do not vanish. Their content and scope are transformed. Science is marginalized from the core of life and relegated to a technical endeavor that upholds the reactionary system. Art is converted into an instrument for depriving enthusiasm of its social content. Novel and artificial environments are established on the peripheries of the society, allowing individuals to withdraw into isolated cells and encounter illusory thrills. Philosophy aims to separate the present from the future. In conclusion, science, art, and philosophy emphasize the perception of life as a phenomenon solely limited to the individual and the



“The advent of a new civilization from Asia taking the lead in science, art, and philosophy worldwide will mark a key step in this process” (Photo: CGTN, 2024).

present moment. The social deterioration observed throughout the decline of every civilization in history has become a prevalent consequence of this approach.

In history it has not been seen that the shell knit on science, art, and philosophy by a declining civilization is broken from within that civilization. The place, where a declining civilization is strongest, is its own epicenter. The shell has consistently been fractured and transcended by rising societies in the periphery, especially those that have relatively most thoroughly assimilated

the accomplishments of the past. Because the social energy essential to breach this shell occurs in cultures that are focused on constructing the future, not in those where development is inhibited.

Currently, humanity is experiencing a transformative process in which the epicenter of civilization is relocating. The change in the center of production marks a front step, while the advent of a new civilization from Asia taking the lead in science, art, and philosophy worldwide will mark a key step in this process.

The neoliberal paradigm concerning science and technology

To effectively formulate a plan for the emerging civilization from Asia in science and technology, it is essential to comprehend the capitalist-imperialist system's perspective on these domains. Since the 1970s, neoliberalism has characterized the imperialist system. The 1970s signify a pivotal moment regarding the strategy employed by this system in the realm of science and technology as well.

Currently, the paradigm of neoliberalism's "Information Age" directs scientific and technological advancements in the West. This strategy, not confined to the West, continues to exert a substantial influence on the global landscape. Moreover, science and technology constitute one of the most significant areas of competition between the global East-South and the imperialist West-North today.

The neoliberal interpretation of the "Information Age"

According to the neoliberal program, economic progress should be totally entrusted to the guidance of capitalist markets. However, the market is incapable of handling public goods. The objective of neoliberalism can alone be realized in a context where all entities are converted into "private goods". Privatization is thus a fundamental notion of neoliberalism.

Markets are unable to internalize indirect returns that extend beyond the short term. To put it another way, markets are myopic. Thus, when economic progress is totally left to the markets, the medium and long term evaporate, and immediate and direct returns become the dominant measure of efficiency.

The meaning that neoliberalism attaches to "information" within the framework of the "Information Age" has been correspondingly shaped. Acceptable

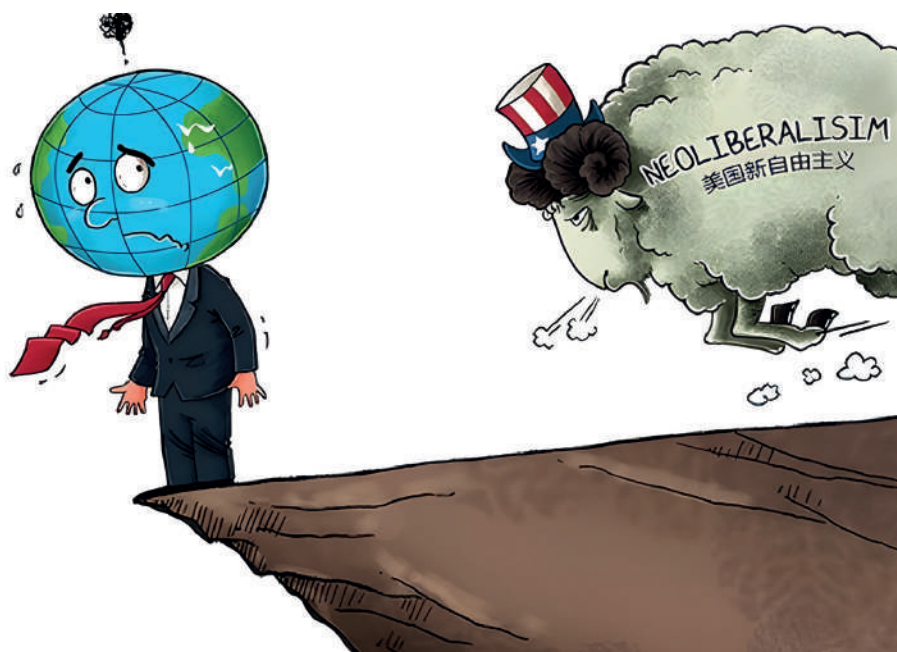
information is defined as that which can be promptly transformed into financial, military, or political power. The generation of information with indirect returns or delayed outcomes is deemed unacceptable, as no economic agent is prepared to bear the "storage costs". This approach transforms information from a public good into a private good created for exchange, allowing market forces to dictate the evolution of knowledge creation. Consequently, science and scientific organizations are included in privatization.

Privatizing the economies of emerging nations and incorporating them into the capitalist global market subjects them to the prevailing imperialist system. Delegating development direction to market spontaneity precludes these countries from formulating a development strategy tailored to their unique circumstances. Consequently, the nation-states of developing countries are diminished to ineffectual surveillance mechanisms. The imposition of privatization by neoliberalism seeks to "eternalize the sovereignty of the sovereign."

The projection of the "Information Age" approach onto developing countries consists of including the fields of science and technology within the same purpose and method. However, a strategy that includes both the long and medium term in scientific and technological development is of vital importance. Leaving the development in this field to spontaneity via privatization leads to irreparable destructive effects.

Scientific and Technological Revolution

Since World War II, particularly from the 1960s onward, the world has experienced substantial technical advancements in communication, automation, and genetics. The notions of "Artificial Intelligence" and "Scientific Technological Revolution" were initially introduced in the 1960s to characterize this process.



“According to neoliberalism’s understanding of the “Information Age”, acceptable information is defined as that which can be promptly transformed into financial, military, or political power” (Cartoon: China Daily, 2018).

Social revolutions constitute interventions in the production relations. The advent of private property due to the Agricultural Revolution marks a pivotal alteration in the production relations throughout human history. The Industrial Revolution, signifying the most significant advancement in production following the Agricultural Revolution, emerged from the dissolution of feudal production relations via democratic revolutions and the development of capitalism as the prevailing mode of production. The social impetus for the Scientific Revolution was provided by the proliferation of capitalist production relations. This revolution has established a radical break from the past by presenting the modern conception of science to humanity. The Scientific Revolution represents a significant triumph of materialism over idealism in the realm of philosophy.

The “Scientific Technological Revolution” is not an

interference in the production relations, nor has it arisen from such an interference. Since the 1960s, substantial alterations in warfare technology, production processes, and social life have undoubtedly transpired. Today, it is indeed true that any technological advancement not grounded on scientific knowledge has become unfeasible. However, the “Scientific Technological Revolution” does not denote a scientific breakthrough; instead, it represents a technological harvest of scientific knowledge whose theoretical foundations were laid before the 1960s. Since the 1970s, fundamental sciences have progressively declined in popularity in the West. The function of the basic sciences has been diminished to addressing deficiencies that directly fulfill the demands of technological advancement. In science, the criterion for the urgency of a discipline has transitioned from pioneering new frontiers to its direct association with technology.

The United States has recognized the “Scientific and Technological Revolution” as a significant area of competitiveness with the Soviet Union. Gorbachev, in declaring the fall of the Soviet Union, ascribed it to “capitalism triumphing over the socialist system through the attainment of the Scientific and Technological Revolution.” Currently, the United States views the enhancement of its dominant and monopolistic status in sophisticated technology as a crucial element in solidifying its global hegemony. The escalation of competition in science and technology between the emerging Asian civilization and the imperialist system is attributable to this rationale. Consequently, it is crucial to comprehend the role of the “Information Age” paradigm and the “Scientific and Technological Revolution” in shaping the United States’ strategy regarding science and technology if one is to form a strategic science and technology framework for the emerging civilization in Asia.

The New Middle Ages and the Necessity for a contemporary Enlightenment

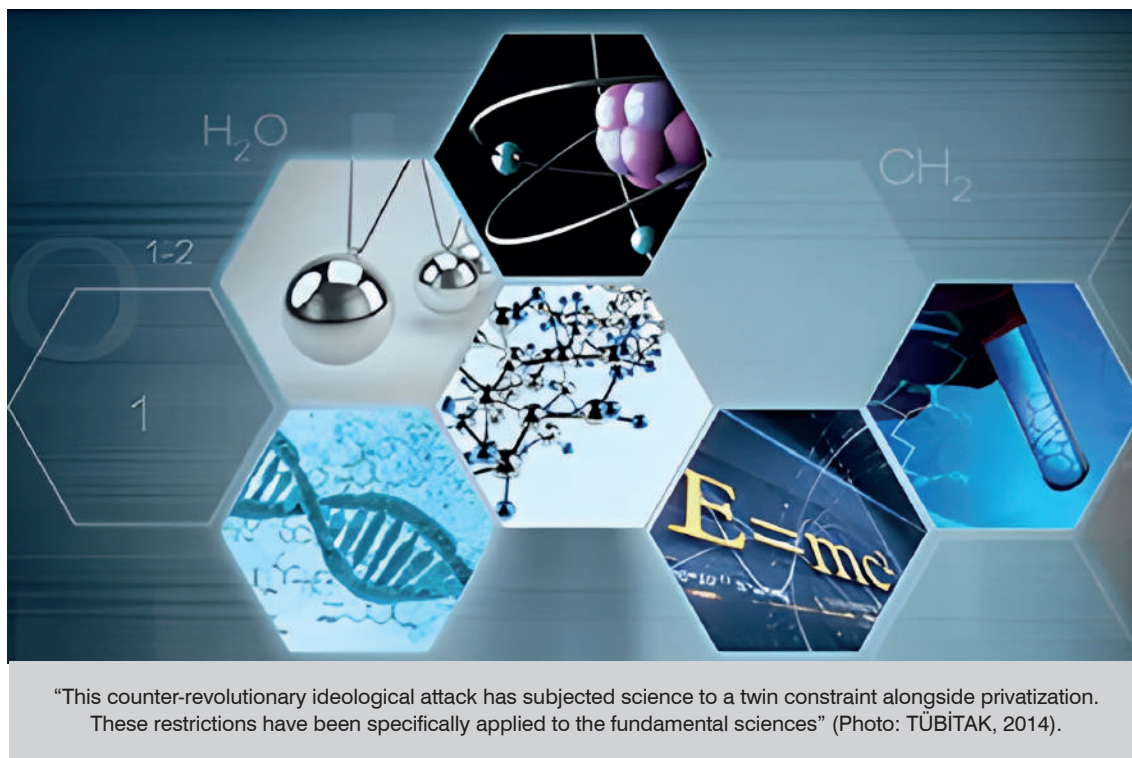
The knowledge we have of nature represents the primary element of productive forces. The main reason humans occupy a central position in the productive forces is precisely this. However, the influence of the natural sciences on social development extends beyond their contributions to productive forces. The engagement of humans with nature also influences their perspective of the world. Throughout history, the impact of scientific breakthroughs on philosophy has occasionally gone well beyond their contribution to productive forces.

The impetus for the astronomical research underpinning the Scientific Revolution is unequivocally the demands highlighted by production and commerce. However, the genuine impact of the

discovery of the movements of celestial bodies and the natural principles that govern them upon manufacture required centuries. The principal contribution of the Scientific Revolution to human advancement was the destruction of the medieval worldview. The Scientific Revolution and Humanism established the groundwork for the Enlightenment, facilitating democratic revolutions against feudalism ideologically. The bourgeoisie, having ascended to power via democratic revolutions, eliminated impediments to the proliferation of capitalist production relations, establishing capitalism as the prevailing mode of production. The thorough integration of scientific discoveries into production via technology transpired throughout the Industrial Revolution. The fact that the time it takes for scientific findings to be reflected in production has greatly shortened today is not because science has changed its character. This occurs because science has been diminished to an endeavor that generates “ready-to-receive” knowledge “on-demand” of technology.

Today, while advanced technological items are being integrated into our daily lives, we also witness a pervasive propagation of anti-science beliefs. The origin of these fallacies is neoliberalism, which is fostered by views of the Middle Ages as well. The objective of this neoliberal fallacy offensive is to suppress social dynamism, disrupt the link between science and the Enlightenment, and marginalize science in societal life, thereby inhibiting its potential as a means for constructing the future.

From World War II to the 1980s, our world underwent a phase in which states wanted independence, nations sought liberation, and peoples aspired to revolution. The revolutionary rise culminated in 1975 with the conclusive triumph of Vietnam, Laos, and Cambodia over the United



States. The United States, to maintain and strengthen its global hegemony, initiated a quest for a new strategy, leading to the emergence of neoliberalism. The ideological offensive, which represents a fundamental component of the neoliberal agenda and had undergone extensive preparation in the 1970s, commenced in the 1980s and acquired additional speed in the 1990s following the disintegration of the Soviet Union.

The core of this assault involves depleting the conceptions that garnered global esteem during the revolutionary ascent, reducing them to simple packing materials refilled with a counter-revolutionary content. First and foremost, the notion of revolution has been distorted. For the past thirty years, all the colorful counter-revolutions planned around the world have been classified as "revolutions" under fancy titles. Particularly, all scientific

conceptions have been subjected to this conceptual deception. In place of objective reality, each individual's own virtual reality has been imposed. Consequently, the universal binding essence of scientific results has been nullified. Furthermore, regarding scientific results as binding for everybody has been deemed "a significant infringement of freedom," and the equal treatment of science and anti-science arguments has been promoted under the guise of democracy. In deference to liberty and democracy, science has been reduced to a technical endeavor, whose findings are solely valid within its limited domain and thereby detached from any social context whatsoever. As several intellectuals have aptly articulated, a "New Middle Ages" has emerged. This approach signifies not a scientific revolution but an anti-scientific counter-revolution.

This counter-revolutionary ideological attack has subjected science to a twin constraint alongside privatization. These restrictions have been specifically applied to the fundamental sciences. Neither can science break free from these shackles using artificial intelligence technology, nor can it be freed of these shackles in the countries that made these shackles. The force that will facilitate the emancipation of science resides alone in the emerging civilization from Asia.

The State's Role in Developing Science and Technology

Scientific and technological knowledge can only be established as a public asset by the state's intervention. The assimilation of scientific and technological knowledge by the whole society will provide a substantial advantage for the rising new civilization over the imperialist-capitalist system. The conversion of information into a public asset facilitates a maximal contribution of this knowledge to enhancing productive forces.

The rationale for the privatization of knowledge in the West is that the competition it engenders will serve as the impetus for knowledge development. Success in scientific and technical research undoubtedly requires an incentive design. However, when motivation is reliant on market dynamics, the trajectory of scientific and technological advancement will accordingly be dictated by market forces. The promotion of science and technology can only occur under the state's leadership and supervision, in alignment with the established science and technology plan.

Scientific and technological research is performed in diverse settings, including corporate R&D departments, universities, research organizations, and specialized laboratories. Consequently, it is expected that the content of incentive systems will differ based on the environment. In certain contexts, pecuniary incentives may prevail, whereas in others, the pursuit of

truth or the enthusiasm for societal contribution may be more prominent. The substance of these regulations should be established by each nation in accordance with its own circumstances. As the process evolves, it is inevitable that the regulations will be modified to accommodate changing conditions. Consequently, the design of incentive mechanisms ought to be regarded as a distinct area for investigation in social sciences.

Grounding development on scientific and technical advancement necessitates an appropriate balance of collaboration and rivalry. In our world, science and art are two domains where outcomes cannot be attained through directives. Consequently, it is imperative to guarantee suitable flexibility in the operations of scientific organizations. Scientific research necessitates expansive thinking and creativity devoid of biases, as it functions at the frontier of the known and the unknown. Flexibility produces the desired outcomes only when it is supported by a robust foundation. Lacking a backbone, flexibility results in an environment whose tissue resembles that of mollusks. The backbone of this process is the science and technology strategy.

The research agenda is fundamental to science and technology policy. Every scientific discipline possesses two distinct sources for its research goal. The agenda's external source is comprised of economic and social requirements. The internal source, on the other hand, represents the research frontier attained by the autonomous advancement of that scientific discipline. The former source is national, whereas the latter is universal. Consequently, the scientific agenda of each nation constitutes a national program that intersects with the scientific agendas of other nations.

The imperialist system contends that there is a unique agenda of science which is universal, aiming to impose its own agenda globally. In science, the yardstick of truth is testing against objective reality. This



“An educational plan aligned with the science and technology strategy necessitates the precise establishment of medium- and long-term objectives in advance” (Photo: CGTN, 2024).

criterion is universal. The notion that scientific knowledge is a collective possession of humanity is a prerequisite for the universality of science. Neoliberalism, on the one hand, constricts the domain of objective reality by positing that each individual possesses her own reality, while on the other hand, it commodifies research, relegating scientific knowledge to a privilege accessible only to those who pay for it. In other words, neoliberalism has curtailed the genuinely universal essence of science. On the other hand, to leverage the scientific capabilities of other nations in accordance with its own objectives, neoliberalism superimposes a facade of universality on national scientific agendas and denounces the national aspect of the agenda as an undesirable form of “chauvinism”, which is unseemly for science.

The national science agenda must align with the national development strategy’s requirements. The execution of the scientific agenda necessitates tho-

rough planning that encompasses the long- and medium-term aspects as well. Effective central planning and its efficient execution can only be realized under state leadership.

The essential factor in executing a research agenda is the development of the requisite qualified human resources. Consequently, the established science-technology plan must be complemented by a corresponding educational program. In the realm of scientific advancement, establishing procedures that facilitate talent discovery and the guidance of those identified talents is of vital importance. The general quality of education is also crucial, as it will broaden the pool from which the scientific workforce will arise. An educational plan aligned with the science and technology strategy necessitates the precise establishment of medium- and long-term objectives in advance. Education and science are the fields where errors in the strategic concentration are hardest to fix.

State leadership is essential for success; however, it is not sufficient on its own. The established plans form a framework. Realization of this framework becomes attainable by mobilizing the essential institutions and individuals within by unleashing high-quality human energy. Scientific inquiry necessitates perseverance. Science education encompasses more than only transmitting established knowledge to students. The pursuit of truth and the cultivation of a public service ethos are essential components of science education.

From the viewpoint of the Developing World, there exists no historical precedent from which a science and technology strategy may be emulated. This situation arises not only from the differing conditions of each country but also from the differing conditions of each era. In the contemporary landscape, success cannot be attained by emulating the scientific and technological trajectories of industrialized capitalist nations. Consequently, innovation, creativity, and entrepreneurship are crucial in shaping the strategy to be adopted.

In the contemporary landscape, achieving path-breaking advancements in science and technology necessitates both a proficient workforce and the creation of appropriate institutions furnished with cutting-edge technological resources and laboratories. Consequently, contemporary scientific endeavors exhibit a far more collaborative character than in previous eras. This feature further reinforces the state's involvement in scientific and technological advancement.

Formulating the appropriate synthesis of long-term and short-term

Today, in the Developing World, security requirements, with escalating global economic competition, are compressing timelines and prioritizing short-term considerations. There is no question that time will not wait for anyone to be ready. Consequently, it is imperative to achieve a substantial amount in a limited timef-

rame. However, the success of the nascent civilization hinges on its capacity for medium and long-term planning and the development of requisite tools for plan execution without surrendering to the constraints of short-termism.

The effective management of the interrelationships among science, technology, and innovation is essential for long-term strategic planning. Science encompasses our comprehensive and systematic understanding of objective reality. Technology encompasses the design and execution of systems that facilitate the efficient use of scientific discoveries in industry. Innovation seeks to enhance the competitiveness of a product through minor modifications within the existing technological framework or to optimize the production process.

The advancement of new technology necessitates a more skilled accumulation, and the outcomes that generate returns require a longer duration to materialize. Consequently, the adequate allocation of resources and requisite equipment for research can only be efficiently accomplished through public channels. Effective planning and the allocation of adequate resources in this domain necessitate state leadership.

Innovative breakthroughs within the existing technological framework, the creation of new technologies, and the discovery of new scientific results are all undeniably significant. The market's operational trajectory in these three domains unavoidably compels science to pursue technology and technology to pursue innovation. Innovative advances are easy to deploy and provide

rapid rewards by enhancing competitive strength. Furthermore, innovation has emerged as the predominant instrument for acquiring a competitive advantage in the contemporary global landscape. Consequently, a nation that neglects the significance of innovation lags in this domain, resulting in economic detriment. The advancement of new technology necessitates a more skilled accumulation, and the outcomes that generate returns require a longer duration to materialize. Consequently, the adequate allocation of resources and requisite equipment for research can only be efficiently accomplished through public channels. Effective planning and the allocation of adequate resources in this domain necessitate state leadership. The effort invested in developing new technology fosters an environment conducive to inventive breakthroughs. It fosters the enhancement of innovation rather than its disregard.

A comparable relationship exists between science and technology. Limiting scientific study to certain sectors that cater to technological demands hinders the acquisition of path-breaking discoveries in fundamental sciences. Undoubtedly, attaining revolutionary achievements in fundamental sciences necessitates a prolonged and arduous procedure for the development of a competent scientific workforce and the provision of requisite experimental equipment. To attain beneficial outcomes in this domain, it is imperative to facilitate international collaboration as well. However, the development of new technologies that will broaden humanity's perspectives can only be realized by pursuing this trajectory for scientific advancement.

The pioneering position of science between science and technology and technology between technology and innovation can only be realized by formulating long-term goals without leaving the shape of these relationships to the markets. The emerging new civilization has no alternative path to attain global leadership in science and technology.

The condition for mankind to attain a classless society is the establishment of an abundant society in which the issue of distribution has been resolved. At different times of historical evolution, various sources of energy have become prominent. The emergence of a society characterized by abundance will be feasible with the advent of an unparalleled energy source. We live in a cosmos consisting of matter and energy. Utilizing the energy inherent in the universe for human benefit necessitates an enhanced comprehension of matter and energy. Without placing a strong emphasis on the fundamental sciences, this goal cannot be accomplished.

The Chinese Experience

The advancement of science and technology is also a topic of social sciences. Therefore, in this field, general and systematic knowledge can only be attained by departing from praxis. Currently, the significant advancements achieved by the People's Republic of China in science and technology represent a crucial experiment for the entire Developing World.

At its 19th National Congress in 2017, the Communist Party of China (CPC) established an objective to achieve a global leading position for China in science and technology by 2035. During the 20th National Congress convened in 2022, the CCP emphasized the advancement of links with the global scientific community. The significance of these decisions is amplified for the Developing World, as China has achieved an extraordinary advancement in science within this brief timeframe. Each nation must formulate its science and technology strategy in a distinctive manner. However, leveraging the experiences of other nations is essential in developing a strategy guided by scientific principles.

China's achievements in science and technology during this period include becoming the first nation to successfully land a spacecraft on the moon's far side, initiating a well-drilling project aimed at reaching a depth of 10,000 meters for "deep underground research" in 2023, advancements in gene editing, artificial intelligence, and materials science, the detection of very low-frequency gravitational waves, the establishment of extensive underground laboratories for the study of dark matter and neutrinos, deep-sea research initiatives, and the completion of the world's largest solar telescope. China has recently achieved a notable advancement in the publication of research articles in international scientific publications.

A report released in 2024 by the National Institute of Science and Technology Policy in Japan indicates that China outperformed the United States in the production of highly referenced and high-impact scientific articles from 2018 to 2020. During this timeframe, China's rate attained 27.2%, but the U.S. portion persisted at 24.9%. The United Kingdom ranks third, with a rate of 5.5%. China's rating of 13th two decades ago illustrates the significant progress achieved.

The research produced by Chinese scientists mostly comprises substantial contributions to processes that have already commenced in their respective domains. The present primary objective of the Chinese scientific community is to



China's Chang'e-4 spacecraft made a soft landing on the dark side of the Moon, marking a major achievement in human exploration of the Moon (Photo: CGTN, 2019).

concentrate on path-breaking research and discoveries, especially in critical scientific domains. This goal constitutes a prerequisite for becoming a global leader in the sphere of science and technology.

China initially promoted foreign capital with certain sophisticated technologies to invest directly in the country to obtain these technologies. The operation of the Advanced Technology Zones has been structured to facilitate China's acquisition and development of these technologies. China's objective today of becoming a global leader in science and technology by 2035 and making major gains towards this goal has been made possible on the basis of this initial accumulation.

A crucial component facilitating China's economic advancement described as "a miracle" is comprehensive strategic planning. Addressing the short, medium, and long-term goals in their interrelation has enabled the country to harness its latent potential across numerous fields towards the primary objectives of each period. The strategy for science and technology in China has been formulated with a similar viewpoint. Accordingly, science and technology constitute the primary elements of productive forces; the identification and nurturing of talent serve as the principal sources of scientific advancement; and innovation acts as the essential catalyst in this

domain, paralleling its role in overall progress.

China initially promoted foreign capital with certain sophisticated technologies to invest directly in the country to obtain these technologies. The operation of the Advanced Technology Zones has been structured to facilitate China's acquisition and development of these technologies. China's objective today of becoming a global leader in science and technology by 2035 and making major gains towards this goal has been made possible on the basis of this initial accumulation. The methodology underpinning this process is the recognition of science and technology as the primary elements of productive forces.

As science and technology constitute the primary elements of productive forces, it is the human element that occupies a central position within these forces. Over 3 million students from China have been dispatched to industrialized capitalist nations, predominantly the United States, for undergraduate and postgraduate education. China has effectively utilized a substantial segment of this trained workforce for its scientific and technological development agenda. In China, the education system is grounded in science from early stages, and the systematic support for talent identification during this process broadens the reservoir from which scientific prowess will arise. It is clear that the efficacy of the established scientific workforce will correlate with the extent of this pool. China's path followed in this domain stems from the recognition that a nation's most precious asset is its human capital. The enthusiasm generated by the objective of revitalizing the Chinese nation through socialism and the ambition to realize this vision are catalysts that activate China's technological prowess.



The Deep Underground and Ultra-Low Radiation Background Facility for Frontier Physics Experiments (DURF) is located beneath Jinping Mountain in Sichuan's Liangshan Yi Autonomous Prefecture (Photo: CGTN, 2023).

China's embrace of innovation as the primary catalyst for overall development, particularly in scientific and technological progress, arises from the recognition that its distinct path will not mirror the developmental trajectory of contemporary developed capitalist nations. The capitalist-imperialist system dictates the "alleged capitalist path" as the developmental trajectory for developing nations. However, adhering to this trajectory results in these nations becoming reliant on the imperialist framework instead of fostering their own development. Consequently, the "Chinese experiment" serves as a significant case study for the Developing World.

China prioritizes international collaboration in

scientific and technological research and endeavors to enhance engagement between the Chinese scientific community and both developed and developing countries' scientific communities. The establishment of a country as a center of attraction in the sphere of science and technology will also bring about closer and tighter interactions with the scientific communities of other countries. Although its benefits for China may not be immediate, prioritizing fundamental scientific research provides it with a strategic edge in its interactions with the global scientific community. Contemporary experiments and observations in fundamental sciences require laboratories and research facilities outfitted with highly costly, sophisticated technological

instruments and apparatus. The privatization of science and the disregard for fundamental sciences make the creation of such facilities in the West difficult. The facilities and equipment that China has recently built, is continuing to develop, and plans to create in the near future will help to make the country a center of attraction in basic sciences from the standpoint of the international scientific community.

China's continuous scientific and technological advancements have demonstrated that the widely held belief in the West that science cannot advance in China because of a lack of "democracy" and "freedom of thought" is simply untrue.

China's continuous scientific and technological advancements have demonstrated that the widely held belief in the West that science cannot advance in China because of a lack of "democracy" and "freedom of thought" is simply untrue. The approach adopted by China in this domain and the insights the Developing World could glean from this approach can be encapsulated as follows: The cornerstone of success is establishing a scientific environment that fosters expansive and adaptable thinking, supported by a robust science and technology strategy in compliance with objective circumstances.

International collaboration in scientific and technological fields

International collaboration is crucial in scientific research. Both the outcomes and the

methodologies offered and evaluated for problem-solving should be shared efficiently, hence expediting research in drawing conclusions. The determinant of effective collaboration is the reciprocal exchange of information and ideas, ensuring that all involved parties derive benefits from the partnership. This objective can be accomplished by structuring international science governance to correspond with this aim.

For international collaboration to be successful, member countries must have defined their own scientific and technological strategies and national science agendas. Every nation gains from collaboration by participating in the execution of its strategy and addressing priority concerns on its national science agenda. Subsequently, international collaboration should concentrate on domains where national agendas converge.

Currently, the imperialist system, mainly the USA, enforces its scientific agenda globally under the pretense of a universal initiative. Thus, it gains the possibility to profit from the trained scientific workforce of other countries in line with its own research goal. To put it another way, "brain drain" happens without physical migration. The influence of agenda-setting stems from the United States' ongoing leadership in science and technology. Furthermore, there exists another formidable instrument that guarantees the endorsement of the enforced agenda. The scientific journals are governed by the imperialist framework, predominantly that of the United States. Currently, publication in these publications is necessary for progression in the academic sphere. Consequently, the subjects deemed essential by prominent mainstream journals generate a significant focal point of interest.



Visitors experience the iFlytek Spark AI-powered model at the 2024 World AI Conference in Shanghai on July 5, 2024 (Photo: CGTN, 2024).

In the same way that the world today needs a fair and egalitarian international order, the scientific community likewise requires a new international science governance that seeks to advance research for the good of all people and empower it to shape the future. A new order can only be established when the emerging civilization attains a global leading role in science and technology. Under the new paradigm, less developed nations will gain from scientific discoveries, as these have been turned into public assets, alongside international collaboration in establishing and enhancing their own scientific competencies. The scientific and technological accomplishments of a nation will not disadvantage other nations; instead, they will confer advantages. Competition among nations in this domain is inevitable. Though this competition will act as an impulse for advancement in science and technology through amicable and constructive rivalry.

The Guidance of Science has Contemporarily Acquired a Holistic Character

Similar to the impossibility of technological advancements devoid of scientific ground, enduring permanent social progress without scientific guidance has also become unattainable. The capitalist production relations that formed under feudalism are the final instance of new production relations that spontaneously developed within the prior social framework. The ascendance of the bourgeoisie to power via democratic revolutions did not lead to the emergence of capitalist production relations; it facilitated their swift proliferation by dismantling the feudal impediments obstructing their advancement. Socialist production relations do not emerge spontaneously within capitalism. History has culminated in the cessation of spontaneity concerning the establishment of new

production relations. The design and establishment of production relations can only be achieved under political authority, whether during the national democratic revolution or any phase of socialism. This process can only be effectively executed under the guidance of social sciences, or, more precisely, scientific socialism.

Human understanding of nature has facilitated the advancement of productive forces throughout history. As we mentioned earlier, the natural sciences have also influenced social transformation to the extent of their impact on the worldview. The alteration of production relations and its correlation with productive forces is the focus of social sciences. In the forthcoming age, as the prominence of the natural sciences within the productive forces increases, the social sciences will also become more indispensable in the transformation of production relations. Consequently, science is acquiring an unparalleled significance in the historical advancement of humanity. Atatürk's assertion, "In the world, for everything, for life, for success, the truest guide is science," which he established as a cornerstone of the Republic of Türkiye, would be recognized as one of the paramount principles of the emerging civilization from Asia.

Today, our world is living through the "Era of National Democratic Revolutions and Opening to Socialism". This era marks a new phase in the interrelation between spontaneity and consciousness throughout history. In this era, it still remains essential to leverage individual interest as a driving force for uncovering and converting the nation's latent potential into optimal production, both quantitatively and qualitatively. This predicament, however, also gives rise to the immediate need of designing social and economic incentive mechanisms that aim to subject individual interests to collective interest.

This issue will persist throughout the entirety of the national democratic revolution, even throughout

socialism, until a classless society is achieved. Revealing the nation's hidden force and converting it into useful energy is not a one-time event. What is at stake is the ongoing transformation of production relations across all time periods in a way that conforms to the level attained by the productive forces and will result in their continued fortification. The theorization of current and future practices in this field will serve as a valuable resource for scientific socialism.

A new civilization signifies a novel culture, a new value system, and a "new human." The current state of our earth and the challenges encountered by the emerging civilization are intricate. However, along this entire process, the reversion of the "homo economicus" engendered by capitalism to its authentic human core would progressively simplify the issues and facilitate their resolutions. 🌸

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Prof. Dr. İbrahim Semih Akçomak*

“The Government should Maintain Ongoing Market Intervention Utilizing Various Policy Tools”



**Dr. İbrahim Semih Akçomak obtained his undergraduate and master's degrees from the Economics Department at METU and completed his doctoral studies on social capital, innovation, and economic growth at Maastricht University in 2009. Subsequently, he was employed for two years in the International Economics division of the Netherlands Bureau for Economic Policy Analysis (Centraal PlanBureau). Since 2012, Akçomak has been a faculty member in the Department of Science and Technology Policy Studies at METU and has published articles in esteemed academic journals, including the Economic Journal, European Economic Review, Regional Science and Urban Economics, and Industrial and Corporate Change. He has participated in numerous international and national projects, notably those associated with the EU Framework Programme. Akçomak additionally holds the position of director of the Science and Technology Policies Research Center (TEKPOL). Akçomak was a Board Member of the International Schumpeter Society from 2014 to 2018.*

“From the 1960s and to the 1980s or 1990s, we instituted a policy akin to a science policy. This is not strictly science policy; rather, it pertains to enhancing the research environment within universities. The formation of the TÜBİTAK Technology and Innovation Funding Programmes Directorate (TEYDEB), the Technology Development Foundation of Türkiye (TTGV), and the Small and Medium Enterprises Development Organization (KOSGEB) established an institutional framework to facilitate industrial R&D. Following the establishment of this corporate organization, industrial R&D initiatives commenced. In recent years, the government has assumed a significantly more proactive role in science and technology policy. Some refer to it as mission-oriented policy in European terminology, while others designate it as a new industrial strategy. These policies encompass mechanisms through which the government actively establishes markets and provides support to specific industries and technologies to a limited degree using early-stage funding.”

Prof. Dr. İbrahim Semih Akçomak, Director of the Science and Technology Policies Research Center at Middle East Technical University, answered Ayça Neslihan Örs’ questions.

What can be said about Turkey’s recent advancements and deficiencies in science, technology, and innovation policies based on an evaluation of their methodology and tangible outcomes?

Prof. Dr. İbrahim Semih Akçomak: A comprehensive analysis over an extended period is necessary to address this topic. What methods have we employed to implement policies since the 1960s, and what criteria do we use for their evaluation? We should discuss this further. Between the 1960s and the 1980s or 1990s, we instituted a policy akin to a scientific framework. While it may not be classified

as scientific policy, it mostly pertains to enhancing the research climate within institutions. Industrial R&D, as a concept and definition, remains mostly undeveloped, with few exceptions such as the PTT Research Laboratory (PTT-ARLA). When did this alteration occur? Changes commenced in the latter half of the 1990s. The formation of the TÜBİTAK Technology and Innovation Funding Programmes Directorate (TEYDEB), the Technology Development Foundation of Türkiye (TTGV), and the Small and Medium Enterprises Development Organization (KOSGEB) established an institutional framework to facilitate industrial R&D.

Following the establishment of this institutional framework, support for industrial R&D commenced. In the initial phase, support is uniformly administered to all actors and beneficiary firms without any selection criteria. Industrial research and development in Turkey primarily commenced in this manner. We

are discussing subsidies that are uniformly applied to all enterprises, such as research and development incentive schemes. We gradually began to forsake this practice after the year 2000, aligning with the global trend. The selection process commenced, and we began to identify sectors. We commenced

Table 1. Prioritized technology fields in National Plans & Studies

Vision 2023 (2003)	11th Development Plan (2018)	CoSTIP Technology Fields Pri-oritization Study (2019)
Information and Communication Technologies	Cyber Security	Information Security
	Micro-Nano-Optoelectronic	Energy Storage
	Biotechnology	Biotechnological Medicine
		Broadband Technologies
Biotechnology & Gene Technologies	Quantum Sensor Technologies	Advanced Functional Materials & Energetic Materials
Nanotechnology	Additive Manufacturing Technologies	Electro Mechanic Systems
Mechatronic		MicroNano Optic Electronic Systems
Production Processes and Technologies		Artificial Intelligence Machine Learning Technologies
		Robotics
Materials Technologies		Machine Learning Technologies
Energy & Environment Technologies		Big Data and Data Analytics and Internet of Things
Design Technologies		Micro-Nano Optic Electronic Systems

“The general trend in Turkey and the world is towards focusing on a specific field, a specific technology” (Table: Sarkaç, 2023).

the selection of technologies. We are currently selecting items. The TOGG instance represents technical product selection. This can also be incorporated into the new industrial policy; nevertheless, the prevailing trend in Turkey and globally is to concentrate on a particular sector or technology.

We have trained specialists capable of offering mentorship to technology companies, overseeing specialized processes, facilitating technology transfer, managing operations in technoparks, and administering the entrepreneurship ecosystem.

The situation was identical in China and South Korea. It was similar in Europe and America. Turkey similarly pursued the same trajectory. Additionally, in recent years, there has been a trend of increased government involvement in science and technology policy. Some refer to it as mission-oriented policy, while others term it new industrial policy, particularly in European discourse. The role designated to the government remains largely unchanged. These policies encompass mechanisms through which the government actively establishes a market and consistently sustains specific sectors and technologies by providing early-stage funding to a certain degree. Turkey is endeavoring to align with this trend. There are, at very least, several examples. The newly unveiled HIT-30 program, which aspires to establish itself as a global hub for high-tech manufacturing by 2030, along with TOGG, may serve as exemplars. If you inquire, “We are attempting to adhere to this trend, but what successes have we typically attained?” For instance, let us juxtapose it with

two decades prior, focusing just on the participants inside the system and human capital. In the early 2000s, there existed technology companies, albeit insufficient in number. Technoparks are absent, the quantity of technology development and support experts is minimal, and around 70-80 enterprises are located within KOSGEB’s Technology Development Centers (TEKMER). The system’s capacity is significantly constrained. Turkey’s most significant accomplishment over the 20-25 year period was the expansion of the number of participants in the system and the development of substantial human capital. Currently, numerous enterprises are situated in technoparks, and they have achieved varying degrees of success. Moreover, there has been a substantial increase in human capital. We have trained specialists capable of offering mentorship to technology companies, overseeing specialized processes, facilitating technology transfer, managing operations in technoparks, and administering the entrepreneurship ecosystem. The major accomplishment of the policies enacted during this period was this.

The most significant failing was the insufficiency of impact analysis and the deterioration of governmental capacity. I believe Turkey’s government capacity is inadequate to attain the next level. Some refer to this as government capacity, while others denote it as the dynamic powers of the state. The government must fundamentally reorganize itself, regarding both people resources and structure, to execute specific policies. Furthermore, the effect assessment of the enacted policies is not performed in Turkey. The completed impact analysis lacks full technical compliance. Consequently, in the absence of impact analysis, we are unaware of the actual efficacy of the adopted policies. The inquiry “If they do not function, what actions should we undertake?” remains unresolved.

Entrepreneurial and Procreative State

What should the government's role be regarding public-private sector ties in research and technology, and more generally, under the above conditions?

Prof. Dr. İbrahim Semih Akçomak: Prof. Dr. İbrahim Semih Akçomak: The government's increased intervention in the market is, in fact, a prevailing tendency. When did it commence? This tendency has arisen in Europe and America after 2010-2015, indicating its development over the past decade, or possibly even less. A policy framework exists wherein the government

intervenes in the market more effectively and, at times, establishes the market, facilitating the development of specific technologies through various tools in the early stages. Turkey is endeavoring to align with this trend in some capacity. Generally, when considering the role of the government, it should be more proactive; however, at what stage should this occur? There exist two distinct opinions on that matter. One of these is the concept known as the entrepreneurial state. Uncertainty is a critical feature in technology development. In an atmosphere of uncertainty, corporations refrain from investing, necessitating government intervention to stimulate corporate investment. If it is unable

Table 2: Turkey's Position in Selected Indicators

	2005	2015	2020		2005	2015	2020
Percentage share of R&D expenditure in GDP				R&D expenditure per capita (\$)			
Türkiye	0.56	0.88	1.09*	Türkiye	67	227	300
EU-27	1.68	2.00	2.19	EU-27	452	767	985
China	1.31	2.06	2.40	China	65	265	413
S. Korea	2.52	3.98	4.81	S. Korea	635	1507	2179
	2005	2015	2020		2005	2015	2020
Percentage share of full-time R&D employees in total employment				Percentage share in all triadic** patents			
Türkiye	2.0	3.6	5.7	Türkiye	0.03	0.09	0.11
EU-27	5.9	7.9	9.1	EU-27	26.21	21.58	19.32
China	1.5	2.1	3.0	China	0.84	5.93	10.24
S. Korea	7.9	13.6	16.6	S. Korea	4.43	4.11	5.63

*Recently, R&D expenditure statistics underwent a revision. TURKSTAT updated the R&D expenditure/GDP ratio until 2015, but this update has not yet been reflected in the source we are using here. The updated figures are 0.97% for 2015 and 1.37% for 2020.

**Registration of the same patent in the European, American, and Japanese Patent Offices. (Table: Sarkaç, 2023).

to achieve this, the government independently invests and seeks to transform the climate of uncertainty into one of risk. But when a risk environment starts to form, it gradually pulls back from supporting this technology or sector. In this regard, we see the example of an entrepreneurial state structure in America, France, and Germany. And then there is a more procreative state structure, as we would say, like the one in China, South Korea, and Taiwan.

It is one of the countries that effectively utilizes Chinese development banking. They constructed a versatile structure capable of facilitating substantial financial transfers to corporations. Furthermore, they instituted public economic businesses.

The concept of the procreative state refers to a state that, like an entrepreneurial state, endeavors to transform the uncertain landscape of technological production into a manageable risk environment. However, even in the face of a risky environment, it persistently redefines its position and supports the industry and technology. Companies and technology are perceived as the embodiment of the market. A market is evolving, although it is evident that the government consistently influences its development. This occurs via many funding channels. It is one of the countries that effectively utilizes Chinese development banking. They constructed a versatile structure capable of facilitating substantial financial transfers to corporations. Furthermore, they instituted public economic businesses. In industries such as automotive and computer technology, they created two or three public economic entities and facilitated competition among them. They established a state capacity capable of designing diverse

organizations and policy instruments. By the government continuously redefining its role, I refer to the persistent engagement in active market intervention through various policy instruments. Not merely “initially, to furnish funding during the nascent phases, to participate, after which disengage from this technology or sector.” I am referring to the government persistently rethinking its role and supporting that sector until it genuinely establishes itself as a technology leader. The most exemplary sector in China is, in fact, information technology. Prior to the early 2000s, had China functioned as an entrepreneurial state, it would have established enterprises such as Huawei, then receded to see the market mechanism in action. However, it did not accomplish that. They successfully established an information technology industry capable of developing the 5G standard due to the government’s continued backing for these enterprises.

Need for Quantitative and Qualitative Impact Analysis

What strategies should be employed for the optimal allocation and utilization of constrained resources in science and technology via government investments to attain maximum effect and value?

Prof. Dr. İbrahim Semih Akçomak: Two significant factors exist. The initial aspect is government capability. The current mission-oriented policies I referenced, which involve a more proactive role for the state, or the new industrial strategy, entail a highly intricate array of policy designs. They can be highly subjective, frequently constituting interventions that lack a rule-based framework. This is occasionally subject to criticism. A regulatory-based policy framework has been advocated by mainstream economics. This comprehension frequently transcends it. Consequently, he frequently faces criticism.

However, the execution of programs advocating for increased government intervention necessitates substantial governmental capability. This indicates that bureaucrats and public officials in the state must possess specific competences related to human capital. Simultaneously, effective state organization is essen-

tial for our adaptation to this new policy framework. For instance, notions like continuity, adaptability, resilience, and cooperation emerge prominently. The second aspect is that to accurately discuss efficiency and impact, an impact study must be conducted. The notion is fundamentally straightforward. Consider a

Table 3. State-Sourced Technological Development

	Passive Intervention	Active Intervention	
	Neo-liberal state	Entrepreneurial state	Procreative state
Intervention in market dynamics	The state performs a market-regulating function	Once uncertainties are eliminated and the market is risk free, intervention is reduced.	Even if there appears a risk environment for the market to function, the government intervenes by redefining its role.
Early-stage financing	More commonly, early-stage support is given to stepwise innovations. The funding mechanism of the market is assumed to work.	Channeling large public funds into technologies that firms cannot invest in.	Public funds are invested in technologies that firms cannot invest in, as well as in complementary sectors simultaneously.
Basic applied R&D financing	Support for applied R&D in universities and experimental development in companies.	High amount of early-stage basic R&D funding. Both government and corporate fundamental research are supported.	High amount of early-stage basic R&D funding. As firm capabilities are scarce, the state itself conducts fundamental research.
Perspective on foreign capital	It substitutes domestic capital. Even without upstream and downstream linkages, it is necessary for new technology and technology transfer.	Early-stage support is focused on building domestic firms. In other sectors, capabilities developed by foreign capital are utilized.	Domestic and foreign capital are complementary for generating domestic firms and technology. Foreign capital is prevented from controlling the market.
Policies that determine the direction of technology	Rare. In some cases, intervention through regulation and competition policies.	Early-stage state intervention determines the direction of technology or creates a market for it.	Due to the competence problem, the state might develop the technology itself. State intervention determines the direction of technological progress.
Policies that determine the spread of technology	Policies for the spread of technology, often through multiple means.	Policies that determine the direction and spread of technology are complementary.	Policies that determine the direction and spread of technology are complementary.
Supply side – demand side policies	The policy objective is to incentivize firms to do R&D under the assumption that firms do less R&D than they should. Mostly supply-side support.	In early-stage, fundamental applied R&D, supply-side and demand-side policies are complementary. Lots of guided and mission-specific support. As firms invest, state support decreases.	High amount of guided and mission-specific support. Supply-side and demand-side policies are complementary. The state continues to support the market by redefining its direction.

“In countries with robust state capability, impact analysis has been included in policymaking, becoming nearly intrinsic to the process” (Table, Sarkaç, 2023).

policy framework. The government intervenes with companies involved in research and development, as well as innovative initiatives, and allocates specific money. Does this investment genuinely produce a measurable impact? For instance, the government promotes research and development investments and allocates cash for R&D to corporations. Do R&D subsidies alter corporate behavior about research and development activities? Do firms begin allocating their own resources to research and development? Are they beginning to get further patents? Is it possible for them to generate additional employment opportunities? It is essential to assess the efficacy of the policy instruments by examining several output variables. This is referred to as quantitative impact analysis. The qualitative impact analysis is significant for that reason as well. The quantitative impact study indicated that the policy design was ineffective. The government did not exert the anticipated level of influence. The government must pose the inquiry “why.” “When it inquires, ‘Why and how can we enhance this?’ we must perform a qualitative analysis.” At the organizational level, we must engage directly in the field and inquire, “Indeed, we have organized these supports in this manner, but what is ineffective, and what do you perceive as lacking?” We ought to inquire, “How can we reorganize this?” This is significantly connected to government capacity. In countries with robust government capability, impact analysis has been included in policymaking, becoming nearly intrinsic to the process. An initial impact assessment must be performed prior to policy formulation. “What results do we anticipate from the policy design, how will it impact which stakeholders, does the innovation system genuinely require such a design, and does it possess the capability to derive benefits from it?” Subsequently, upon the implementation of the policy, a mid-term impact assessment is required. An effect analysis is performed at the

conclusion of the policy design or after an extended duration. Policies must be crafted with flexibility in mind. When design issues occur, data from both quantitative and qualitative impact analyses is utilized to promptly address those issues. The policy design must be adjusted in accordance with the knowledge. In instances when this is not accomplished, we cannot discuss any influence or efficacy. Policy designs must be based on data.

A Setting for Competency Assessment Mitigates Brain Drain

Are the existing science and technology strategies being executed effectively in mitigating brain drain in Turkey? What variables inhibit their effectiveness?

Prof. Dr. İbrahim Semih Akçomak: The current policy framework contains limited specialized designs intended to mitigate brain drain and attract foreign talents. Programs such as TÜBİTAK 2232 are designed to incentivize researchers who are citizens of the Republic of Turkey and possess research experience in natural sciences, engineering and technology, social and human sciences, medical sciences, and agricultural sciences to return to Turkey from abroad and resume their work domestically. I am uncertain about the efficacy of those designs. There is a great demand for intellectual talent in the domains of Science, Technology, Engineering, and Mathematics (STEM) in both Europe and America. Specialized programs are established to cultivate a workforce in STEM subjects, deter emigration, and attract foreign immigrants. Occasionally, these foster specific sectors and technology, thereby generating a workforce. Occasionally, it offers direct assistance to the labor. It provides certain benefits; for instance, a segment of the wage is exempt from taxation. Competent individuals are primarily drawn to environments that facilitate the application of their skills.

Table 4. Turkey's Position in Innovation-Related Indices

	Ranking in 2015	Ranking in 2019-2020
Global Competitiveness Index	51 (out of 140 countries)	61 (out of 141 countries, 2019)
Global Innovation Index	42 (out of 128 countries)	61 (out of 141 countries, 2019)
Global Entrepreneurship Index	28 (out of 132 countries)	44 (out of 137 countries, 2019)
European Innovation Index	32 (out of 37 countries)	33 (out of 39 countries, 2020)

"What results do we anticipate from policy design, which stakeholders will be impacted and in what manner, does the innovation system genuinely necessitate such a design, and does it possess the capability to derive advantages from it?"
(Table: Sarkaç, 2023)

Countries that cultivate this climate both mitigate brain drain and effectively recruit new talent. Regrettably, Turkey is not among these nations. However, a more significant issue exists beyond this. That is the current political-economic climate in which Turkey is situated. Although policies aim to mitigate brain drain, I doubt their efficacy for this reason. This is a considerable challenge for a growing nation such as Turkey. Due to the depletion of human capital. Furthermore, the migration that Turkey receives is predominantly uneducated. We are losing educated individuals and are also incapable of attracting them.

Advancing through Knowledge Collaborations

How can international collaboration in research and technology be assessed for Turkey, a developing country with a comparable level of development to other nations?

Prof. Dr. İbrahim Semih Akçomak: The generation of knowledge, be it technological or scientific, is no longer isolated. Knowledge production

is occurring in a far more collaborative approach. Given its collective nature, I believe every nation must collaborate, whether at its own developmental stage or with more advanced countries. TÜBİTAK possesses bilateral agreements. To my knowledge, such bilateral agreements have been established with numerous countries for many years. Turkey's involvement in the 5th Framework Programme of the European Union constitutes a type of informational collaboration. Another significance of the EU framework programs for Turkey exists. Similar to the European Union's role as a political anchor, the EU framework programs function as a stabilizing force for the convergence of knowledge and technology. As a nation integrated into global value chains, we must similarly engage in knowledge production chains. Knowledge evolves through such cooperation. Collaborations with technologically advanced nations foster a learning environment through cooperation in technology and its organization. The greater the advantages we derive from this educational setting, the more favorable it will be for Turkey's advancement. 🌸

Atatürk'ün Bütün Eserleri



Mazlumlar Dünyasının başarıya ulaşan ilk devriminin ve düşünce birikiminin belgeleri

Türk halkının Millî Demokratik Devrimi'nin lideri Mustafa Kemal Atatürk'ün yazdığı, söylediği ve imzaladığı bütün metinler

1908 Hürriyet Devrimi öncesinden 1938'de yaşama gözünü kapatana kadar

Kronolojik sırayla

Yükselen Asya'nın 21. Yüzyıldaki büyük devrimci atılımlarına ışık tutacaktır

Türk Devrimi'nin Yayınevi

KAYNAK YAYINLARI



Contributions of Intelligence Agencies to Türkiye's Security



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ABSTRACT

Intelligence has been a tool used by states to ensure their security. This effort, which primarily involves the process of gathering and evaluating information, has become professionalized over time and has become an element that determines the security strategies of states. Security is one of the most important pillars of a state's continued existence. This has military and economic dimensions, as well as other dimensions such as alliances. Intelligence is one of these methods and plays an important role in state policies, future plans and instant security measures. Today, cyber security technologies are an important component of national security and economic security. Türkiye is taking important steps to strengthen national security by developing cyber security policies against cyber threats. These steps enable Türkiye to be in a stronger position in national and international security policies. This article will examine the impact of intelligence activities on state security and how they shape state policies. It will also examine which types of intelligence are effective in state security policies.

Keywords: intelligence, cyber security, security, security policy, Türkiye.

Introduction

IN THE CONTEMPORARY INTRICATE security landscape, intelligence emerges as a pivotal factor in influencing state strategic decisions and safeguarding national security. The processes of globalization have rendered the dangers and risks encountered by states more complex, hence increasing the significance of

intelligence (Scott & Jackson, 2004). Global threats that surpass national boundaries, including terrorism, cyberattacks, and organized crime, pose risks that exceed the capabilities of conventional military forces. Intelligence, with its profound analytical capabilities and information dissemination, is crucial for effectively confronting these challenges (Gill, 2012; Andrew, 1997; Moran, 2015; Scott & Jackson, 2004).

Countries of considerable strategic significance, such as Türkiye, are perpetually faced with both internal and external threats. The geographical position and regional dynamics of Türkiye complicate its security policies, underscoring the essential role of intelligence in shaping these policies. Thus, the capacity of intelligence to deliver precise, dependable, and prompt information is crucial for the efficient implementation of Türkiye's security strategies. In this framework, intelligence information and analysis safeguard Türkiye's national, political, and economic interests from both internal and external threats (Hastedt, 2022; Hoffman, 2022). Consequently, the significance and influence of intelligence are paramount in the development and execution of Türkiye's security strategies. This article seeks to analyze the role of intelligence agencies in shaping Türkiye's security policies.

In what ways do diverse regional dynamics and multiple internal and external threats influence Türkiye's intricate geography, and how do its intelligence operations enhance national security?

The essay examines the importance of cybersecurity technologies in security policies. The analysis examines the impact of national and international cyber security policies on Türkiye's security plans. In what ways do diverse regional dynamics and multiple internal and external threats influence Türkiye's intricate geography, and how do its intelligence operations enhance national security? Which kind of in-

telligence influence the formulation of Türkiye's security policies? This article will examine the responses to these inquiries.

Security in Theories of International Relations

The Realist Perspective on Security

Realism serves as a crucial foundation for comprehending the security and foreign policy decisions of governments (Booth, 1991; Walt, 2010). This theory posits that the principal objective of states within the international system is to safeguard their national security and uphold sovereignty. From a realist viewpoint, the primary determinant of inter-state relations is the balance of power, wherein states endeavor to safeguard their national interests (Karabulut, 2015). In an anarchic system characterized by a deficit of trust in international relations, each state is accountable for its own security and formulates strategic plans to safeguard itself against threats from other states.

The realist view posits that governments perpetually have security concerns within the international system. This apprehension arises from the chaotic nature of the international system, compelling governments to secure their own safety. At this juncture, intelligence becomes a pivotal component in the realist perspective of security. Intelligence denotes the collection and analysis of information to anticipate the intents, military capabilities, and strategic actions of adversaries in the global context. The realist theory perceives this process as central to governments' endeavors to maintain the balance of power and to prepare for possible threats. National security operations of states depend on precise and



"Intelligence has become a pivotal factor in shaping the strategic decisions of states and safeguarding their national security in the contemporary intricate security landscape" (Photo: Global Times, 2024).

prompt intelligence. Intelligence enhances governments' comprehension of other states' military readiness, strategic partnerships, and foreign policies, facilitating the formulation of suitable policies. In this context, intelligence is essential for maintaining security and developing tactics to manage the balance of power from a realist viewpoint.

The recognition of uncertainty and insecurity as inherent aspects of international relations in realist theory compels states to develop robust intelligence systems. States utilize intelligence to diminish ambiguities in the international system, render threats more predictable, and appropriately formulate their national security plans. Intelligence enables states to assume a more proactive position against external dangers and enhances

their endeavors to safeguard national security. Another crucial role of intelligence in realist theory is its impact on the balance of power. Realist theory posits that states must devise balancing tactics to counteract the power growth of competitor states. In this context, intelligence enables a precise comprehension of adversarial states' military and political capabilities, hence helping governments to more effectively control the balance of power. The Cold War era serves as a significant historical example of this phenomenon. Throughout the nuclear weapons race between the United States and the Soviet Union, both parties conducted comprehensive intelligence operations to observe one other's strategic maneuvers and military capabilities. This case explicitly illustrates the role of intelligence in realism security measures.

In the security and balance-of-power framework of realist theory, intelligence is a crucial component in how nations safeguard national security and regulate power dynamics within the international system. States utilize intelligence to anticipate the military capabilities and political maneuvers of their adversaries, adjust their security strategies appropriately, and endeavor to safeguard their national interests. Consequently, within the realist paradigm, intelligence is regar-

ded as a crucial element in the mechanisms of safeguarding security and maintaining the balance of power in the international sphere (Kolasi, 2014).

The Liberal Perspective on Security

Liberal theory offers an outlook in international relations emphasizing state collaboration, the significance of international institutions, and



“Military operations against terrorist organizations are integral to the security policy of countries”
(Photo: MSB, 2019).

the pursuit of peaceful resolutions. This perspective contends that state collaboration and the establishment of global norms are essential for maintaining international security. Liberalism posits that military weapons alone do not ensure security; instead, collaboration, economic integration, democratization, and the efficient operation of international institutions enhance it. In this framework, intelligence assumes a distinct role within the liberal conception of security, functioning as a mechanism for establishing trust among states and promoting collaboration against shared threats (Birdiřli, 2011).



From a liberal viewpoint, intelligence not only protects national security but also promotes international collaboration and security.

From a liberal viewpoint, intelligence not only protects national security but also promotes international collaboration and security. This idea promotes state collaboration in addressing common security threats instead of pursuing individual power rivalry. In this context, intelligence facilitates information exchange, fosters confidence-building initiatives, and addresses shared dangers including international terrorism, organized crime, and global crises. Liberal theory posits that governments ought to tackle security issues by employing systems that enhance mutual interdependence, rather than concentrating only on their own interests in international relations. Governments utilize intelligence as a mechanism to cultivate trust and

enhance collaboration. In the realm of international organizations and alliances, intelligence sharing enhances governments' collaboration in tackling global security concerns. International institutions, such as the United Nations and NATO, promote intelligence sharing among member states, facilitating the formulation of collaborative policies for sustaining global security. This collaboration not only bolsters national security for governments but also enhances the global security landscape.

Liberal theory underscores the pivotal function of international institutions in comprehending world security. States utilize these institutions to exchange intelligence, establish confidence-building measures, and mitigate the dangers of prospective wars. Such collaborations enhance mutual trust among nations and diminish the probability of conflict. Moreover, international institutions enhance the transparency of governments' security policies and foster peace in the global context. In this context, intelligence sharing is regarded as a crucial component that bolsters security cooperation (Doyle, 2005; Jones & Davies, 2012; Layne, 1994). Economic integration and trade linkages hold significant importance in the liberal conception of security. The enhancement of economic relations fosters interdependence among nations, hence diminishing the likelihood of war and conflict. Consequently, intelligence sharing not only supports security measures but also functions as a strategic instrument to ensure economic collaboration and the security of international trade (Baylis, 2008). For instance, the dissemination of economic intelligence across nations enhances the secure execution of international trade, hence strengthening the principle of interdependence.

A crucial aspect of liberalism is the democratization process. Liberal theory posits that interactions among democratic governments are characterized by greater peace and stability. Democratic states exhibit greater internal transparency and accountability, resulting in the more open execution of their security measures. Within this framework, intelligence exchange and collaboration are crucial for maintaining security among democratic nations. Liberal thinkers contend that democratization fosters international peace and assert that the probability of conflict among democratic states is diminished.

Consequently, intelligence collaboration among democratic nations enhances the worldwide security landscape.

The Marxist Perspective on Security

Marxist theory examines security through the prism of economic disparities, class conflicts, and imperialist strategies inherent in the capitalist framework. This viewpoint posits that economic structures and class relations, rather than political dynamics among states, determine international security (Birdiřli, 2011).



“The Marxist perspective views security discourse as a manifestation of economic exploitation inherent in the capitalist system and the strategies implemented to safeguard the interests of the elite classes”
 (Cartoon: Industrial Worker, 1911).

The capitalist mode of production enforces economic exploitation, and policies designed to protect the ruling classes influence security discourse. From a Marxist viewpoint, capitalist governments employ intelligence as a mechanism to protect the interests of the ruling classes and uphold the capitalist system (Booth, 2007: 155–156).



Marxist theory asserts that capitalist states employ intelligence as a tool to protect the global economic system and the interests of the ruling classes. In this environment, intelligence operations seek to minimize military threats, protect economic and political interests, exert pressure on the working class, and legitimize imperialist policies.

Marxist theory asserts that capitalist states employ intelligence as a tool to protect the global economic system and the interests of the ruling classes. In this environment, intelligence operations seek to minimize military threats, protect economic and political interests, exert pressure on the working class, and legitimize imperialist policies. Marxists employ intelligence as an instrument in class conflict, shifting security measures from a focus on national security to the preservation of the capitalist system. Capitalist nations employ intelligence operations to detect factors that jeopardize their economic interests

and implement countermeasures against these risks. Marxist theorists contend that nations utilize intelligence to stifle revolutionary movements, inhibit the ascendance of the working class, and preserve the capitalist system. The Marxist perspective regards intelligence not as a means to regulate power dynamics among states, but as a mechanism to navigate conflicts of interest between class formations and to maintain the supremacy of the ruling class.

According to Marxist theory, capitalist states implement imperialism as a strategy to broaden their economic interests and exert control over resources. Cognition is important to the execution of these policies. Imperialist nations depend on intelligence operations to safeguard their military and economic dominance, facilitating strategic choices for resource management and market proliferation. Within this paradigm, intelligence operates as an instrument facilitating the implementation of imperialist policies. Capitalist nations collect intelligence regarding the economic and military capabilities of other nations and utilize this information to advance their strategic objectives. The Marxist perspective contends that the principal objective of these intelligence operations is to uphold the global capitalist system and safeguard the interests of the elite classes. In this context, intelligence serves not to foster collaboration or peace among governments, but to strengthen the economic hegemony of capitalist nations.

From a Marxist viewpoint, class hierarchies and economic disparities assess security and intelligence. Security encompasses not only military aspects but also the pursuit of economic and social justice. Individuals perceive the disparities inherent in the capitalism system as the principal catalyst for wars and conflicts.

Consequently, from a Marxist viewpoint, the assurance of security necessitates the eradication of economic systems and class-based disparities. In this context, intellect is perceived as a tool employed to perpetuate these disparities. Marxist ideology posits a direct correlation between the fundamental deficiencies of the capitalist system and security practices. In this environment, intelligence operates to safeguard the economic and political interests of the ruling classes and acts as an instrument of repression

against the emergence of the working class or revolutionary movements. In this setting, the resolution of class conflicts and economic disparities attains security, with intellect functioning as an instrument in this class fight.

The Constructivist Perspective on Security

Constructivist theory regards the concept of security in international relations as a socially produced phenomena. This viewpoint asserts



“The constructivist hypothesis asserts that the interactions, perceptions, and identities of states influence interstate security” (Cartoon: UCLA, 2024).

that the perceptions, identities, and social interactions of states influence their comprehension of security. From a constructivist perspective, security is not a static fact but a process shaped by identities, norms, and shared values across states. Consequently, mutual perceptions and societal norms influence governments' security strategies, which acquire significance within a social environment (Ertem, 2012). In this perspective, constructivist security perceives intelligence as an essential instrument for cultivating mutual trust and comprehension in inter-state relations (Newman, 2001).



Intelligence collects information that might modify the perspective of allies and adversaries, which in turn informs interstate security strategies. Intelligence is essential for understanding the formation of identities and perceptions in the establishment of security policy.

The constructivist hypothesis asserts that the interactions, perceptions, and identities of states influence interstate security. Intelligence is crucial in establishing trust or mistrust among states. Constructivists utilize intelligence not alone to evaluate the military capabilities of governments, but also to understand their connections and cultivate trust grounded in common social norms. In this context, intelligence influences

perceptions, identities, and collective norms among states, facilitating the establishment of a peaceful and cooperative framework for security in international relations. The constructivist view highlights the significance of norms, values, and social structures in shaping the security concerns of governments. Intelligence significantly influences states' opinions of each other, hence determining security strategies within a social framework.

Intelligence collects information that might modify the perspective of allies and adversaries, which in turn informs interstate security strategies. Intelligence is essential for understanding the formation of identities and perceptions in the establishment of security policy. The constructivist view asserts that social interactions and the formation of social institutions, alongside military and material might, influence security strategies. States utilize intelligence operations to comprehend the intents, identities, and security policies of other nations, subsequently formulating their security strategies based on this intelligence. Intelligence significantly influences interstate perceptions and their effects on security policies.

From a constructivist viewpoint, security is not a static entity but a fluid process influenced by changing social norms and interactions. Intelligence contributes to the formation and alteration of states' perceptions and identities of each other. For instance, engagement through intelligence between one state and another regarded as an adversary may result in a transformation of this perception, facilitating the establishment of a new trust-based relationship. Intelligence facilitates the understanding of the social development of security policies via norms and relationships.

Constructivist theory influences the security policies of states based on identities and social norms. In this sense, intelligence aids states in comprehending their identities and their relationships with other states. Identity is a crucial factor that influences state behavior in the international arena and informs the formulation of their security policies. Governments utilize intelligence to comprehend the identities of other governments and formulate corresponding security policies. Moreover, intelligence functions as an essential tool in understanding the development of international norms and their manifestation in security policies. The constructivist approach informs the comprehension of security about the identities and norms of nations. Intelligence is crucial in shaping views and identities among states throughout this process. Given that a social environment imparts significance to security policy, intelligence can utilize collected information to reorganize security dynamics among nations (Ertem, 2021). For example, intelligence acquired by a state can enhance trust in its interactions with another state, so facilitating the creation of a peaceful security environment between them.

The Role of Intelligence in Security Policies

Intelligence is crucial in formulating and protecting a nation's security policies (Söylemez, 2019). The influence and role of intelligence on these policies are examined from various perspectives within each theoretical framework. Realist theory posits that intelligence is a key instrument for states in their quest for security amid international anarchy. From a realist standpoint, intelligence primarily functions to identify the intentions and military capacities of external entities that

may threaten a state's national interests, facilitating the execution of strategic actions to mitigate these dangers. In this context, intelligence is vital for the state's existence by influencing its power dynamics and security strategies. The realist theory underscores the significance of intelligence in assessing external threats and formulating defense strategies accordingly.

Liberal theory posits that intelligence is essential not just for safeguarding national security but also for fostering peace through collaboration among nations and international institutions. A liberal worldview regards intelligence as a mechanism that cultivates trust between governments and promotes collaboration in addressing shared dangers. From a liberal perspective, intelligence sharing within international security alliances and collaboration among democratic nations enhances global peace and security. This viewpoint perceives intelligence as not merely a means of protecting national interests, but also as an essential mechanism for promoting global peace and enhancing international collaboration.

Marxist theory posits that capitalist nations employ intellect as a mechanism to protect the interests of the ruling classes. From this viewpoint, imperialist nations utilize intelligence to uphold class hierarchies and broaden their economic interests. The Marxist perspective asserts that the competition among states for economic interests and resources influences international security and conflicts. Capitalist nations employ intelligence to navigate these conflicts and eradicate factors that could jeopardize their economic interests. Marxist ideology perceives intelligence as an instrument in class conflict, designed to protect the interests of the ruling classes within the capitalist framework.

The constructivist view intricately associates the function of intelligence in security policies with the formation of states' perceptions, identities, and social norms regarding one another. From a constructivist viewpoint, social relationships and identities among states influence security threats and national security measures. Intelligence is crucial in shaping identities and attitudes among states. For example, a state's intelligence operations can collect information that enhances trust in interactions with other states or alters perceptions of dangers (Kavsıracı, 2020). In this context, intelligence influences the formulation of security policies as an element of social processes within the constructivist framework.

The Historical Context of Türkiye's Security Policies and Threats

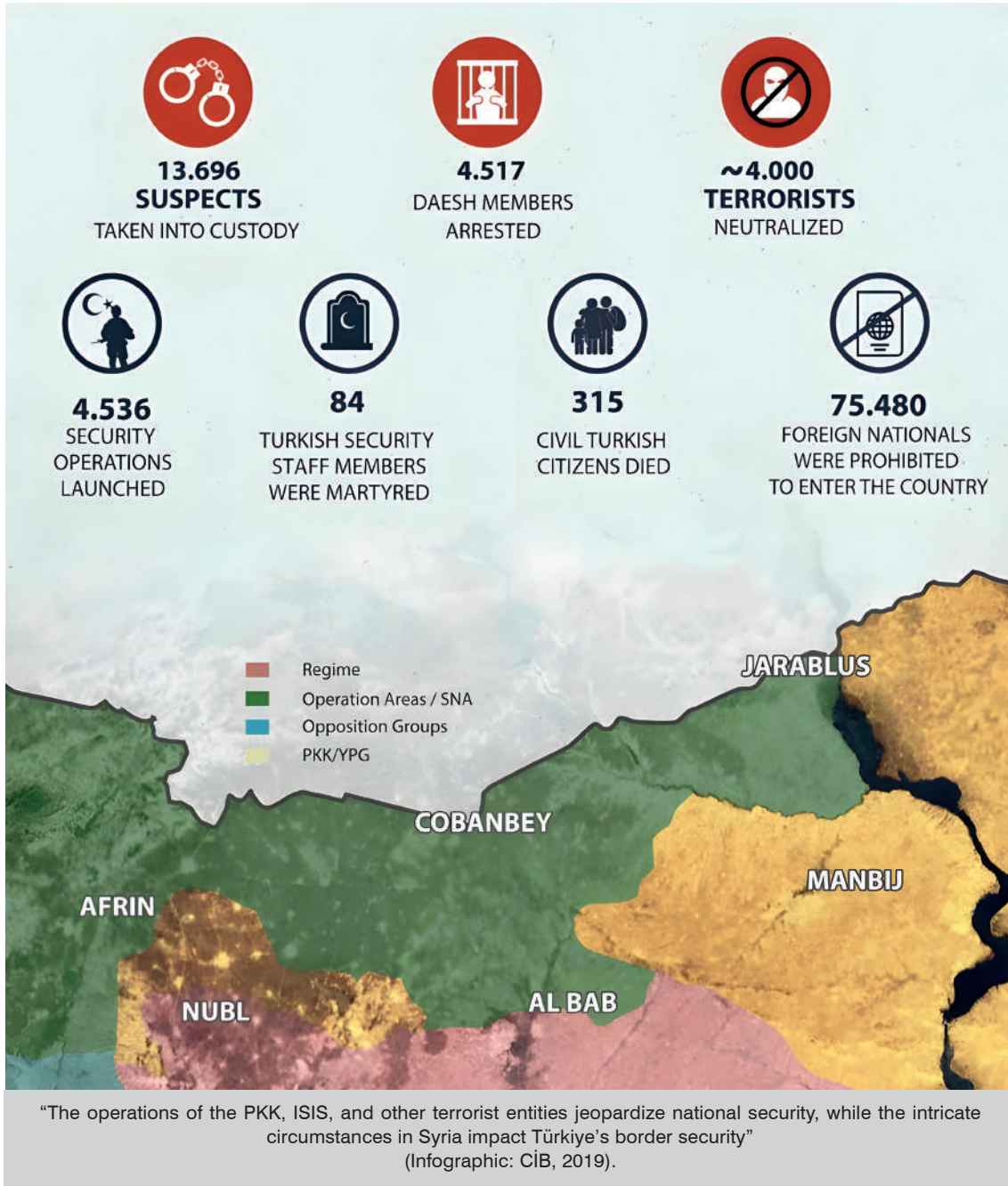
Türkiye has historically been a country with a strategic location that has faced various internal and external threats. Türkiye's geographic location at the intersection of various cultures and its historical context have significantly influenced its security policy (Bilgin, 2007; Karakullukçu, 2014; Diez, 2012; Fidan, 1999). The transition from the Ottoman Empire to modern Türkiye saw considerable alterations in the country's borders, regional dynamics, and foreign ties, which greatly influenced the development of its security policy. During the Cold War, factors such as Türkiye's NATO membership and the Soviet menace significantly influenced the nation's security policies. The strategic decisions undertaken during this period impacted Türkiye's relations with the West and enhanced the prominence of intelligence services. Subsequent years witnessed developments, including regio-

nal conflicts and terrorism, that altered Türkiye's security policies and introduced new dimensions to the operational actions of its intelligence agencies. Grasping the historical context of Türkiye's security policies is essential for understanding the nation's strategic response to internal and external challenges, along with the involvement of intelligence services in these policies (Aydın, 2014).

Türkiye confronts several security risks influenced by regional and global factors. Recent geopolitical shifts and regional conflicts have presented numerous threats to the nation's security. Instability in adjacent nations, the existence of terrorist groups, ethnic and religious schisms, cyberattacks, and global ambiguities are critical to Türkiye's security.

Türkiye confronts several security risks influenced by regional and global factors. Recent geopolitical shifts and regional conflicts have presented numerous threats to the nation's security. Instability in adjacent nations, the existence of terrorist groups, ethnic and religious schisms, cyberattacks, and global ambiguities are critical to Türkiye's security. The internal strife in Syria and Iraq, regional volatility, and the existence of terrorist groups pose significant security threats along Türkiye's borders. The operations of the PKK, ISIS, and other terrorist entities jeopardize national security, while the intricate circumstances in Syria impact Türkiye's border security.

Figure 1. Türkiye's Fight Against DAESH



Moreover, cyberattacks have emerged as a substantial danger, underscoring the necessity for Türkiye to enhance its cybersecurity capabilities.

These risks require a reevaluation of Türkiye’s security policy and the efficient reaction of intelligence services (Açıkbaş, 2022).

Contributions of Intelligence to Türkiye's National Security

Türkiye prioritizes intelligence activities due to its geopolitical location, regional dynamics, and the security risks it encounters. Intelligence agencies are created to actively safeguard national security by researching internal and external threats, conducting counterterrorism operations, securing borders, and facilitating strategic decision-making in international relations (Yılmaz, 2012). The principal intelligence agencies in Türkiye comprise the National Intelligence Organization (MİT), the Intelligence Department of the General Directorate of Security, and Gendarmerie Intelligence. These agencies function in diverse domains to safeguard and uphold national security (Dağdeviren & Kedikli, 2023).



The MİT is pivotal, particularly in counterterrorism initiatives. The intelligence supplied by MİT is an essential asset for surveilling the operations of terrorist entities such as PKK, ISIS, and FETÖ, incapacitating their leaders, and disassembling their networks.

The National Intelligence Organization (MİT) is crucial to Türkiye's security strategies addressing both internal and external threats. The MİT

is pivotal, particularly in counterterrorism initiatives. The intelligence supplied by MİT is an essential asset for surveilling the operations of terrorist entities such as PKK, ISIS, and FETÖ, incapacitating their leaders, and disassembling their networks. In 2019, MİT's information enabled the identification of ISIS leader Abu Bakr al-Baghdadi's position in Syria, permitting his neutralization via an international operation. These actions unequivocally illustrate MİT's efficacy in countering international terrorism and its tangible contribution to Türkiye's security (Acar, 2019).

The Intelligence Department of the General Directorate of Security is essential for maintaining Türkiye's domestic security. Intelligence regarding internal threats, organized crime, illicit arms trade, drug trafficking, and the urban operations of terrorist organizations informs the operational activities of security forces. This department's intelligence has thwarted multiple possible terrorist assaults in urban areas and eliminated city-based terrorist cells.

The Gendarmerie Intelligence plays a crucial role in security operations in rural regions and border protection. The information gathered by Gendarmerie Intelligence is crucial for identifying unlawful border crossings, surveilling the actions of terrorist groups in rural regions, and strategizing cross-border missions. For example, Gendarmerie Intelligence in the field gathers comprehensive data for operations designed to obstruct terrorist organizations from traversing the borders of Syria and Iraq.

A significant concern for Türkiye's national security is border security. Intelligence agencies are essential for maintaining border security, especially in combating illegal immigration, human trafficking, and transnational terrorist threats.

In light of the Syrian civil war and the refugee crisis along Türkiye’s border with Syria, intelligence operations concerning border security are crucial for sustaining control and mitigating security threats. Intelligence units consistently gather data to thwart illegal migration, observe cross-border terrorist operations, and fortify borders; they disseminate this information to border security units.

Intelligence is crucial in regional and international interactions. Türkiye’s vigilant observation of political and military events in adjacent nations profoundly impacts its foreign policy approaches. These agencies furnish Türkiye with intelligence that enhances its comprehension of regional power dynamics, facilitates the management of its ties with neighboring countries, and informs its stances on international forums. The intelligence supplied by MİT in war zones including as Libya and Syria is crucial for strategizing Türkiye’s military interventions and evaluating the security

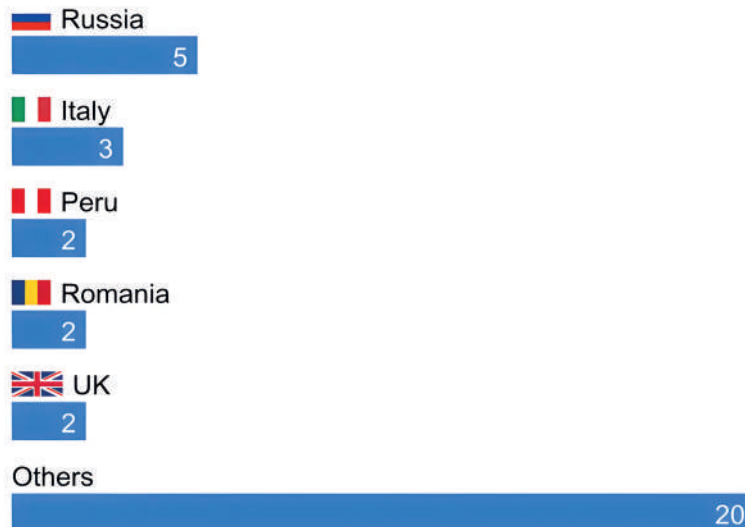
landscape in these areas.

In summary, intelligence agencies play a vital role in Türkiye’s national security. Their information bolsters Türkiye’s capacity to address internal and external threats in counterterrorism, border security, international collaboration, and the development of foreign policy strategies. The efficient operations of intelligence agencies strengthen Türkiye’s national security against threats, while prompt strategic judgments influence the nation’s security policies. The precision and efficacy of intelligence are fundamental factors that enhance Türkiye’s position in both regional and global contexts.

The Role of Cybersecurity Technologies in Türkiye’s Security Policies

Cybersecurity has emerged as a vital element of national security strategies. Cyberthreats can inflict significant harm on the military and political

Figure 2. Cyber Attacks on the Military and Defense Industry in 2022 (by country)



“Cybersecurity has emerged as a vital element of national security strategies”
(Figure: KonBriefing, 2024).

frameworks of nations, as well as their economic systems (Singer & Friedman, 2014). Türkiye seeks to establish a strategic advantage by advancing cybersecurity solutions in response to the rising incidence of cyberattacks.

Currently, both economic security and national security acknowledge cyber security as an essential element. The appropriation of superior semiconductor technologies by China from the Netherlands-based ASML corporation underscores the critical significance of cybersecurity in economic interactions. This episode prompted the Western world to formulate stricter policies towards China and elevated cyber espionage and economic security concerns to a prominent position on the international agenda (Segal, 2022). In this context, cybersecurity technologies have evolved into both a military imperative and a facet of commercial rivalry. Türkiye has acknowledged the significance of cyber security and has implemented numerous measures to enhance its capabilities in this domain. Türkiye has delineated its strategy in this domain through publicati-

ons such as the National Cyber Security Strategy and Action Plan, promoting the advancement of national cyber security solutions in collaboration with both public and private sectors.

The establishment of the National Cyber Incident Response Center (USOM) represents a significant advancement in Türkiye's cyber security efforts. This center seeks to enhance national security by augmenting Türkiye's early warning and response capabilities against cyber attacks. Furthermore, domestic software and hardware development initiatives are substantially augmenting Türkiye's cyber security capabilities. Specifically, defense industry firms like Aselsan and Havelsan want to diminish foreign reliance by developing cybersecurity software and solutions. Türkiye formulates its cyber security policies in tandem with its national security plans, emphasizing the critical role of collaboration between the public and private sectors in this domain. Universities, research institutions, and technology firms collaborate under this partnership to develop local and national cyber security solutions.

Figure 3. Cyber Attacks on the Military and Defense Industry in 2022 (number by country)



"Cyberthreats can inflict significant harm on the military and political frameworks of nations, as well as their economic systems" (Figure: KonBriefing, 2024).

In the future, the strategic significance of cybersecurity technology in international relations will persist in its escalation. Cyberattacks aim not only at data expropriation but also at undermining the economic and political authority of nations by assaulting essential infrastructures (Healey, 2013). Türkiye will persist in enhancing its cyber security capabilities and devising national cyber security solutions to address these challenges. Aiming to become a regional leader in this domain will be a primary factor influencing Türkiye's security strategies.

Cybersecurity has emerged as a critical element of Türkiye's national security strategies. The rise in cyber threats underscores the necessity of investing in cybersecurity technologies, with autonomy in this domain regarded as a crucial objective for national security. Türkiye's pursuit of cyber independence through the development of domestic cybersecurity solutions will enhance its standing in both national and international security policies.

Conclusion

This paper analyzes the impact of intelligence on national security strategies via the lens of various international relations theories. Each theory assesses the influence of intelligence on security strategies according to its core methodology.

Realist theory posits that governments perpetually seek security within the anarchic framework of the international system. In this environment, intelligence serves as a crucial instrument enabling governments to surveil their adversaries, maintain a balance of power, and implement strategic measures. Realists regard intelligence as an essential component for states to safeguard their national interests and sovereignty.

Liberal thought perceives intellect as both a means of securing safety and a catalyst for fostering inter-

national collaboration. The liberal worldview regards inter-state cooperation as essential for peace and considers intelligence sharing as a mechanism that strengthens this cooperation. The utilization of intelligence via international institutions and partnerships enhances global security.

Marxist theory perceives intelligence as an instrument utilized by capitalist regimes to protect the interests of their ruling classes. This theory asserts that intellect functions as an instrument in the class struggle to maintain the capitalist system and protect economic interests associated with imperialist activities. The Marxist perspective influences security policy in relation to economic disparities and class conflict.

Constructivist theory emphasizes the significance of intelligence in shaping socially created security perceptions and the development of identities in interstate relations. According to this theory, security threats and national security plans are influenced by the perceptions that states have about one another as well as the social norms that shape these perceptions. Intelligence is regarded as a fundamental component in shaping these perceptions and is essential in fostering trust between states.

Cybersecurity technologies hold strategic significance in international relations. Türkiye's national security plans and cybersecurity policies are evolving concurrently. The public and business sectors cooperate to develop domestic and national cybersecurity solutions. Enhancing the capability to counter cyber attacks has emerged as a critical element in formulating security policy. Developing national solutions in cybersecurity is a crucial measure Türkiye has implemented to enhance its standing in both national and international security policies and to achieve cyber independence.

In conclusion, while intelligence fulfills many purposes across different theories, it is crucial in inf-

luencing states' national security policy. Intelligence is deemed essential in both national and international security, serving as a means to build a balance of power, facilitate international cooperation, or exert control in class conflict. 🌸

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Ankara as a Role Model during the Second Sino-Japanese War: “Chongqing is Our Ankara!”¹



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ABSTRACT

The cadres of the 1911 Chinese Revolution and the early cadres of the Communist Party of China (CPC) were especially interested in the Turkish Revolution (Demircan & Zhangxu, 2023; Akalın, 2023). Underlying this interest was the War of Independence against imperialism led by Mustafa Kemal Atatürk and the achievement of full economic and political independence through the Republican Revolution. The Chinese resistance to Japanese imperialism during the Second Sino-Japanese War drew an analogy between the move of the capital to Chongqing after the fall of Nanjing and Türkiye's move of the capital to Ankara after the occupation of Istanbul. On December 4, 1937, just two weeks after the Guomindang government announced on November 21, 1937, that it had moved its capital to Chongqing, Yun Fu, editor of the journal *United Review* (统一评论), wrote an article titled "Chongqing is Our Ankara!". The *United Review* was a political journal edited by Zhang Yunfu (张云伏) and published by the United Review Press, which was founded in Chengdu in November 1935 and ceased publication in November 1939. The weekly *United Review* was on a mission to reunite a warlord-ridden and politically divided China. This approach parallels Türkiye's policy of uniting all sectors against imperialism during the War of Independence.

Keywords: Ankara, China, Chongqing, Second Sino-Japanese War, Türkiye.

Introduction

ALL REVOLUTIONS IN THE WORLD HAVE influenced each other (Zedong, 1975: 314). This also occurred between the Turkish Revolution and the Chinese Revolution. The success of the Turkish Revolution was a source of hope and a model for all oppressed nations. The cadres of the 1911 Chinese Revolution and the early cadres of the Communist Party of China (CPC) were especially interested in the Turkish Revolution (De-

mircan & Zhangxu, 2023; Akalın, 2023). Underlying this interest was the War of Independence against imperialism led by Mustafa Kemal Atatürk and the achievement of full economic and political independence through the Republican Revolution. Following the occupation of Istanbul, the capital of the Ottoman Empire, after the First World War, Ankara, became a new center in Türkiye's struggle for independence. After the victory in the War of Independence, Ankara became the capital of Türkiye.

On July 7, 1937, Japan moved to invade China, and an all-out resistance to Japanese aggression erupted. When the Sino-Japanese War could not be ended quickly, the Nationalist Government accepted the reality of preparing for a long-term war of resistance and had to reorganize its war strategies. On November 20, 1937, Lin Sen and his delegation arrived in Hankou and, as Chairman of the Nationalist Government, issued the “Declaration of the Relocation of the Nationalist Government to Chongqing”, announcing the relocation of the capital to Chongqing. On December 1, 1937, the National Government officially began to operate in Chongqing.

The Chinese resistance to Japanese imperialism during the Second Sino-Japanese War drew an analogy between the move of the capital to Chongqing after the fall of Nanjing and Türkiye’s move of the capital to Ankara after the occupation of Istanbul.

The Chinese resistance to Japanese imperialism during the Second Sino-Japanese War

drew an analogy between the move of the capital to Chongqing after the fall of Nanjing and Türkiye’s move of the capital to Ankara after the occupation of Istanbul. Articles titled “Chongqing is our Ankara!”², “China’s Ankara”³, “Panoramic view of China’s Ankara”⁴, “Best wishes to China’s Ankara”⁵, “Sichuan is China’s Ankara”⁶, “Discussion on China’s Ankara”⁷ and “Yunnan is China’s Ankara”⁸ were written in various Chinese newspapers between 1937 and 1939. The treatment of the provisional capital, Chongqing, as the “Ankara of China” turned Ankara into an inspirational symbol in the eyes of the Chinese.

On December 4, 1937, just two weeks after the Guomindang government announced on November 21, 1937, that it had moved its capital to Chongqing, Yun Fu, editor of the journal *United Review* (统一评论), wrote an article titled “Chongqing is Our Ankara!”. In this respect, at a time when government officials were flocking to Chongqing, the author’s feelings and belief in victory, which he likened to Ankara during the War of Independence, were strong. The author compared the geographical and strategic position of Chongqing with the conditions of Ankara. He emphasized that Chongqing, like Ankara, was a difficult city for the enemy to reach but an easy city in terms of protection and transportation (Fu, 1937; Kalkan & Fidan, 2023).

There were two reasons behind the Chinese

identification of Chongqing as the capital with Ankara. Firstly, the interest of Chinese progressives in the Turkish Revolution turned into sympathy. Secondly, Türkiye stood by China in its difficult times. On May 16, 1935, China opened its first embassy in Türkiye, which played a positive role in developing bilateral relations. Then, despite the war conditions in China, Türkiye opened an embassy building in Chongqing. Türkiye's envoy (Turkish: Orta elçi), Emin Ali Sipahi, arrived in Chongqing on December 21, 1939, and started his duty by presenting his credentials (BCA, 1940; TDA, 1939; Hong Kong Herald, 1939). Türkiye's diplomatic mission in Chongqing, which was closed in 1931 due to economic problems, was reopened after a gap of 8 years and upgraded to an embassy.

The United Review (统一评论)⁹

The United Review was a political journal edited by Zhang Yunfu (张云伏) and published by the United Review Press, which was founded in Chengdu in November 1935 and ceased publication in November 1939. At the time, China was divided into different regional administrations in political chaos (CNBKS, 2024). The weekly United Review was on a mission to reunite a warlord-ridden and politically divided China. This approach parallels Türkiye's policy of uniting all sectors

against imperialism during the War of Independence.

Advocating Sun Yat-sen's Three People's Principles, the magazine published reports on current events, political and economic situations, border issues, and academic research on ancient figures and events. The weekly magazine included columns such as Border Issues, Academic Research, Current Events Commentary, Short Commentary, Youth Forum, Conference Theater, World Week, Eastern Scale, Western Claw, Opinion Collection, Youth Corner, and more (CNBKS, 2024).

Among the main articles published in the journal were "How to deal with the aggression of Japanese imperialism?", "The political system China needs", "The Gongsun clan in Liaodong at the end of the Han Dynasty and the beginning of the Wei Dynasty", "International economic struggle and the Chinese Revolution", "The political geography of Britain, France and Italy in the Mediterranean", "The revival of the countryside and the cooperative movement", "Border problems: A study on Songpan", "How to build a psychological national defense", "World cultures and Chinese culture", "The past, present and future of the Sichuan Rural Construction Institute" and "The past, present and future of the Sichuan Rural Construction Academy" and "The Japanese Renovation Movement".

統一評論週報

重慶——我們的安哥拉

雲 伏

安哥拉是小亞細亞的一個中等城市，小亞細亞又稱亞洲土耳其。歐戰期中，土軍敗於協約國，一九一八年停戰條約成，協約國圖瓜分土耳其，迫君士坦丁堡政府接受亡國條款，而政府亦與協約國通，以求苟安。是時，土耳其青年黨仍有極大潛勢力，有名的陸軍高級將官凱末爾止駐節安哥拉城，傳檄軍隊，共圖復興土耳其。有志之士，四方響應，集於安哥拉，安哥拉遂成爲土耳其民族復興的根據地。此新興的勢力，將青年土耳其黨加以改造，成立土耳其國民黨，推凱末爾爲領袖。一九一九年，英法意及希臘聯軍攻土京，君士坦丁堡陷，土王成爲傀儡。君士坦丁堡政府乃一通敵之偽府，於是，安哥拉事實上成爲新土耳其的新京。凱末爾以少數之兵，惡劣之械，困守安哥拉幾近三年，最後並遭兵臨城下之危，卒賴不屈不撓之人心，團結一致之精神，將希軍戰敗，突圍而出，英法意先後來和，新土耳其遂以困守安哥拉三年之結果，卒建立新共和國，一洗近東病夫之醜名，並濯百餘年之國恥。於是，安哥拉聞名世界，土耳其人世世不忘，不有邊鄙安哥拉，那有今日的土耳其。

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Original text of the article titled "Chongqing is our Ankara!", page 1
(Photo: Hung Ying Library, 2024).

HISTORY

Chongqing - our Ankara 重庆: 我们的安哥拉 统一评论周报 Yun Fu, (1937)

Ankara¹⁰ is a medium-sized city in Asia Minor, also known as Asian Türkiye. During World War I¹¹, Türkiye was defeated by the Allies and reached an armistice treaty in 1918. The Allied Powers carved up Türkiye and forced the Istanbul¹² (Ottoman) government to accept the terms of subjugation. The government also colluded with the Allied Powers to seek momentary ease with no thought of the future. At that time, the Young Turks still had great potential. The famous senior army general, Mustafa Kemal¹³, was stationed in Ankara and issued a recruitment notice in an attempt to revive Türkiye. People with lofty ideals responded from all sides and gathered in Ankara. Ankara became the base of Turkish national rejuvenation. This emerging force transformed (reformed) the Young Turks, established the Turkish National Party¹⁴ and elected Mustafa Kemal as its leader.

Mustafa Kemal chose this place as a base for reviving the nation because it had inconvenient transportation and could easily avoid enemy threats.

In 1919, the British, French, Italian and Greek forces attacked the Turkish capital. Istanbul fell, and the Sultan became a puppet. The government of Istanbul was a puppet government that collaborated with the enemy, so Ankara became

the new capital of the new Türkiye. With a small number of soldiers and poor weapons, Mustafa Kemal was trapped in Ankara for nearly three years. In the end, the city was under siege. However, thanks to his unyielding heart and spirit of unity, he defeated the Greek army and broke out. As a result, Britain, France and Italy came to make peace with Türkiye. New Türkiye only established a new republic after being trapped in Ankara for three years, erasing the ugly name of the Sick Man of the Near East and the national humiliation of more than a hundred years. Therefore, Ankara became famous worldwide, and Turkish people will never forget it. Without moving the capital to Ankara, there would be no Türkiye today.

Ankara is in the middle of Asia Minor, with mountains to the north and sandy plains. It has railway transportation from east to west but is not well connected in all directions. Mustafa Kemal chose this place as a base for reviving the nation because it had inconvenient transportation and could easily avoid enemy threats. At the same time, it is located in the center so that it can control the rest of Türkiye. The people here are simple in heart, have a revolutionary style, and can undertake the arduous work of rejuvenating the nation. Who knew that in a remote hinterland like Ankara, so many people would die because of the revolution? Because Ankara is located in the remote hinterland, it is a safe place. Establishing the Turkish central government here means that Ankara and the Turkish state will exist. Therefore, Türkiye can realize its long-term war plan and achieve its goal of final victory.

(2)

安哥拉位於小亞細亞中部，北負大山，南臨沙原，東西有鐵路交通，但非四通八達。凱末爾之以此為復興民族根據地，以其交通不便，易避敵軍威脅，位於中部，更策應殘餘之全土，人心樸實，有革命風，允爾與復興民族之艱鉅工作。焉知此僻處腹地之安哥拉，竟成亡秦必楚之三戶。因為安哥拉僻處腹地，是安全地方，土耳其中央政府樹立於此，即表示安哥拉存在一日，土耳其國家存在一日，所以，土耳其能實現長期抗戰的計劃，並完成最後勝利的目的。我們的國民政府自十一月二十一日起，宣布遷都重慶，遷都的目的，在國府宣言中說得明白，(一)遷中樞於安全地方，以打破敵人迫我為城下之盟的迷夢，(二)遷中樞於西部中國，以表示長期抗戰的決心，(三)以中樞的安全，保障抗戰的最後勝利。現在的日寇，正如當年進攻土耳其的希臘，遷都以實現長期抗戰，正如固守安哥拉三年一樣，保安哥拉可以證土耳其革命成功，戰敗敵人，重慶何嘗不能保證我們戰勝倭寇，完成最後勝利的目的，所以，重慶已經成了我們的安哥拉。

然則，重慶有沒有安哥拉的資格呢？我的答覆是有。從形勢方面說，重慶處於叢山之中，四川四圍的山和水，就是天然的金城鐵壁。從交通方面說，東有長江，順流而下，輪運便利，交通敏捷。南有公路，可達湘黔，再通滇桂粵，直至於海，湘黔川黔成昆寶蓉鐵路成，更成鐵路運輸之中心。西通成都，直達陝隴，公路已成，軍運便利。再就物產方面言，四川為膏腴之地，無物不產，予以開發，寶藏無限，尤以糧食問題，絕無恐慌。且四川易守難攻，高屋建瓴，東南北可三路並出，進而規復中原，敵寇一旦帥老，我之銳氣，絕不可當。而川人敏捷，遊俠尚義，向產革命志士，縱不云西南半壁，即川中一隅，亦等一國，以抗強寇，游優有餘，何況戰局前途，絕不致此。故以各種條件而論，重慶實優於安哥拉，安哥拉可成復興土耳其民族的根據，重慶當然更是復興中華民族的最後根據地。

不過，安哥拉之能成為復興土耳其民族的最後根據地，不僅其地勢，交通



世界一週

一，比京會議開幕以後

在比利時舉行之九國公約國會議，已於十一月二十四日晚通過報告書後，於極端悲觀空氣中宣告無期延會。關於報告書內容及公布與否問題，自會議重開以來，即成為諸國中心，經過二十二日之激烈辯論後，我所希望之積極表示，仍未通過，並內意大利代表之反對公布，而我代表顧維鈞氏亦以會議並無結果，毋庸公布，遂決定通知與各關係國。會業公開發表之方式。宣言內容，計分十二點，一，重申條約尊嚴之旨，二，武力不能求和平，三，違反條約，促進軍擴，四，比京會議之目的在尋求和平解決中日紛爭之法，五，申述二十日索比京會議之工作，六，會議希望中日兩國能尋求和平解決之道，但非直接談判，七，申明九國公約之和平旨趣，八，會議相信中日紛爭終能和平解決，嘉惠國際，九，會議懇切建議中日停戰，十，會議希望國際不忽視和平解決之道，十一，延會後各國政府繼續交換意見，尋求解決中日紛爭之道，十二，將來由主席或兩會員國之申請，會議重開。本報於比京會議召集之初，即斷定其絕無結果，今果一一實現

Original text of the article titled "Chongqing is our Ankaral", page 2

(Photo: Hung Ying Library, 2024).

Our National Government has announced that it will move the capital to Chongqing on November 21. The purpose of moving the capital is clearly stated in the National Government Declaration.

(1) Move the capital to a safe place to break the enemy's dream of forcing us to sign a treaty

under coercion.

(2) Move the capital to western China to show Chinese determination to resist the war for a long time.

(3) Use the security of the capital to ensure the victory of the war of resistance. Today's Japanese invaders are just like the Greeks who atta-

HISTORY

cked Türkiye and moved their capital to achieve a long-term war of resistance. Just like they were trapped in Ankara for three years, protecting Ankara can prove the success of the Turkish revolution and defeat the enemy. Why couldn't Chongqing prove our victory over the Japanese pirates and achieve the goal of final victory? Therefore, Chongqing has become our Ankara.

Mustafa Kemal's politics are the mother of Türkiye's victory against the enemy, which is the Ankara government's courage to unite the power to resist the enemy and carry out political innovation.

However, does Chongqing have the qualifications to become Ankara? My answer is yes. In terms of location, Chongqing is located among mountains, and the mountains and rivers surrounding Sichuan are natural barriers. In terms of transportation, there is the Yangtze River in the east, and the transportation is convenient and fast. A highway in the south can reach Hunan and Guizhou, then connect to Yunnan, Guangxi and Guangdong until it reaches the sea. When the Hunan-Guizhou-Sichuan-Guizhou-Chongqing-Chengdu Railway is completed, it will become the center of railway transportation. It connects to Chengdu in the west and directly to Shaanxi and Gansu. The highway has been completed, and military transportation is convenient.

In terms of products, Sichuan is a fertile land. It produces everything, and if it is developed, it has unlimited reserves. Especially when it comes to food issues, there is no panic. Moreover, Sichuan is easy to hold but hard to attack. It is well-positioned on high ground. It can advance in three directions from the east, south, and north and restore the Central Plains. Once the Japanese enemy's morale is low, the vigor of our soldiers will never be stopped. The people of Sichuan are agile, adventurous, and righteous, and they have always had many revolutionary martyrs. Not to mention the southwestern half of the wall; just a corner of Sichuan is equivalent to a country that can resist strong pirates.

Moreover, the future of the war will never come to this. Therefore, in terms of various conditions, Chongqing is better than Ankara. Ankara can become the basis for rejuvenating the Turkish nation, and Chongqing is certainly the last base for rejuvenating the Chinese nation.

However, Ankara can become the final base for the rejuvenation of the Turkish nation. Its terrain, transportation, products, and tasks are not only the absolute conditions that determine its success. At the same time, Mustafa Kemal's politics are the mother of Türkiye's victory against the enemy, which is the Ankara government's courage to unite the power to resist the enemy and carry out political innovation. Although Chongqing is compared to Ankara, if the future National Government does not actively engage in consolidating the power of unity to resist aggression, implement reform politics, and spiritually irrigate the anti-war forces, Chongqing will still be Chongqing, and it may not be called China's Ankara.

，物產，人物等，為決定其成功之絕對條件，凱末爾的政治，更為土耳其抗敵致勝之母，此即安哥拉政府抗敵團結之有力及政治革新的魄力。重慶雖然是安哥拉，今後的國府，倘不積極從事於鞏固團結，僅有的力量及刷新政治的實施，把抗戰力量精神上加以灌溉，重慶還是重慶，未必真能被人稱為中國的安哥拉。

土耳其安哥拉政府鞏固團結，每力量的方法，是召集國民會議及確定國民黨專黨專政由於前者，把真正的國民意志表現出來但是國民會議同時把一黨專政的原則確定，所謂各黨各派絕對放棄其主張，而聆命於國民黨，實現一致的行動。因為天下定於一，國民黨專政的原則不確定，則國民會議是衆議盈庭，莫衷一是的，並且將成為黨爭的屠宰場。所以，安哥拉政府的政權，是確確實實立於軍事統治的基礎之上，而同時未忘去他的民主立場。我們祇看當時的國民會議，絕對受土耳其國民黨的領導，絕對登崇凱末爾為領袖，就可見當時抗戰團結力的鞏固情形。其次，關於刷新政治方面，安哥拉政府亦能做到他革命的限度。他毫不遲疑的廢止帝制，取消宗教與政治的連繫關係，改革社會及經濟制度，所以，安哥拉政府不僅是復興土耳其民族的民族主義集團，更是土耳其社會革命的領導者，他確實能把土耳其領進嶄新的歷史階段，使全部土耳其人為實現其新生命而奮鬥，不達目的，絕不停止。這就是說，安哥拉政府有其形式的條件，更有其精神的條件，兩者俱備，決定了土耳其民族復興運動的勝利。

國民政府到了重慶，從交通，地勢，物產，人力各方面說，形式的條件已經完備，合於支持長期抗戰的須要，不過，為完成於勝利條件，我們希望國民政府迅速努力灌漑。在鞏固團結力量方面，我們希望國民政府迅速努力灌漑。在鞏固團結力量方面，我們希望國民政府迅速努力灌漑。一切動搖抗戰力量的陰謀，中國國民黨本身是民衆的政黨，他所指導的政府並未稍犯專制之病，不應當允許動搖一黨專治及讓政不從民的言論和行動存在，祇須中國國民黨不出賣中華民族，國民政府不勾結日寇，現在的政權就應當確

，願者吞之之悲感。本來，北京會議之產生，限於國聯中日問題諮詢委員會之建議，今北京會議既告完全失敗，則中國諮詢委員會當必重開，以尋求善後之法。據傳來消息，委員會於本月十左右當能重開，但究竟能有如何結果，則非吾人所敢希望，不過，講求公理，亦未始非弱者對強者之道，而實際如何，除中國民族自強出路，一一抗戰到底——別無他法。

二、英法調整歐洲關係

英代表哈里斯使德與德當局之談話，本報前期已略為申述。惟德國目前外交活動之中心要求，在企圖逼使英法承認退還德屬殖民地，而英法之難於和德商量者亦在此，故此英法始終恐懼歐洲和平被破壞，即比京會議之無結果，亦未嘗非因此。現英法間又繼英德談話而舉行英法談話，法總理旭丹及外長台爾博斯一行，已於十一月三十日啟程赴倫敦，應英法之邀，而就歐洲國際關係，為一般的討論。因英法談話繼英德談話而舉行，中間的國際關係，當至密切，倫敦發生英將親德，並勸告法國謀俄，以滿足德國對中歐之野心，作為暫緩要求退還殖民地，藉維歐洲和平之傳說。英將親德，未必能成事實，而英法必對德為相當之讓步，此為維持歐洲和平之代價，恐將為必然之趨，歐局倘能借此而暫得解決，遠東局勢必發生大變，惟此則最少當須三四個月，故我今日之支持長期抗戰，從種種方面說，均

Original text of the article titled "Chongqing is our Ankara!", page 3

(Photo: Hung Ying Library, 2024).

The Turkish government in Ankara's method of consolidating and uniting its forces to resist aggression was to convene the National Assembly and determine the National Party's single-party rule to demonstrate the true will of the people. However, the National Assembly also determined the principle of one-party dictatorship: each party would give up its

advocate and take orders from the National Party to achieve unified action. Because all under heaven submit to one ruler, if the principles of the National Party's dictatorship were uncertain, the National Assembly would be filled with disagreements and become a slaughterhouse for party disputes. Therefore, the Ankara government's regime was indeed

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based on military rule, while at the same time, it had not forgotten its democratic stance.

The Ankara government was not only a nationalist group that revitalized the Turkish nation but also the leader of the Turkish social revolution. It will certainly lead Türkiye into a new historical stage and enable all Turks to strive for their new lives.

If we only look at the National Assembly at that time, it was under the leadership of the Turkish Nationalist Party. It respected Mustafa Kemal as its leader, which showed the consolidation of the anti-war unity at that time. Secondly, the Ankara government can achieve its revolutionary limits regarding political reform. They did not hesitate to abolish the monarchy, cancel the relationship between religion and politics, and reform the social and economic system. Therefore, the Ankara government was not only a nationalist group that revitalized the Turkish nation but also the leader of the Turkish social revolution. It will certainly lead Türkiye into a new historical stage and enable all Turks to strive for their new lives. If they fail to achieve their goals, they will never stop. That is to say, the Ankara government has its own form and spirit. Both of them determine the victory of the Turkish national rejuvenation movement.

The Nationalist government moved to Chongqing, and in terms of transportation, terrain, re-

sources, and manpower, the formal conditions were already complete, which met the needs of supporting the long-term resistance. To achieve the spiritual conditions for ultimate victory, we hope that the Nationalist government will quickly work hard to irrigate. In consolidating unity and strength, we hope the Nationalist government will sweep away all conspiracies that undermine the anti-Japanese forces. The Kuomintang itself is a political party of the people, and the government it guides has not committed any tyranny. We should not allow any remarks or actions that undermine the rule of one party or falsely accuse the government of not obeying the people to exist. As long as the Kuomintang does not betray the Chinese nation and the Nationalist government does not collude with the Japanese invaders, the current political power should be supported. I dare assert that the Chinese people will not oppose his existence and leadership in the anti-Japanese war. However, in terms of refreshing politics, we hope the Nationalist government can start anew with the people and find ways to alleviate their suffering during this capital relocation. Four hundred million Chinese people unanimously resist the enemy, support the Kuomintang, and support the Nationalist government. They are willing to pay for any legitimate demands of the country and legitimate needs of the anti-Japanese war.

Moreover, a little spiritual pain and material loss can only be achieved through demands beyond these limits. Many citizens cannot respond, with no way out, and under the political rule of the Three Principles of the People, they are constantly in the abyss. I remember Mr Zhuminyi traveling around the Beijing Yunnan (Jing-Dian) National Highway last year and receiving over 3000 complaints along the way.

立，敢斷言中華民族亦絕不會反對他的存在和他的抗戰領導權。不過，刷新政治一點，我們却盼國民政府能於此遷都之際，與民更始，把民衆的困苦，設法解除。中國四萬萬民衆，他們一致抗敵，一致擁護中國國民黨，一致擁護國民政府，凡是國家的正當要求，抗戰的任何正當需要，肝腦塗地亦不足惜，何況一點精神的痛苦和物質的艱難祇有那超越這些正當範圍的請求，若干國民都是呼天不應，搶地無門，在三民主義政治統治之下，而日處於深淵之中。記得瞿民道先生去年週遊京漢國道，沿途所收申冤詞狀不下三千餘封，最近湖北省府又發現精戰中的貪污官吏，蔣委員長近更通令各省嚴懲貪吏。這貪污之風，不過是我國政治上中毒最深的官僚主義之一，二十幾年來的革命，因為這一點不能剷除，革命實在減色不少。這不過是舉其一例，我們希望遷都後的國府能夠拿出更革命的精神，把政治加以爬梳和澄清。要有革命的政治，才能够灌漑革命的力量，長期抗戰要他支持，最後勝利非他不能爭取。

河山一天一天的縮小，殺敵之氣一天一天的高漲，我們希望內在矛盾一天一天的消除，團結力量一天一天的鞏固。所有一切，我們希望遷都後的國民政府，一直往前做去，更希望於最短期內，先從這民族復興根據地——四川——開始做起。

上海失陷後 大時代新文字
長期抗戰宣傳品 **均無法大量續運** 本店正籌設
編選部 創印 **救亡活頁文選** 數百種 **陸續出版**
已選各篇目錄
察哈爾陷落的沉痛經過
民衆動員的實施方案
抗敵宣傳大綱
論抗日民族革命戰爭的持久性
最後關頭
怎樣組織遊擊隊
怎樣組織遊擊隊
遊擊戰的實施
爲照垣訪問記
用鮮血爭取民族復興

長江
蔣中正
朱德

成都開明書店編輯部謹啓
傳作義
地址：祠堂街

爲必要。

三、意大利承認偽滿

據十一月二十九日羅馬消息，意大利已正式承認偽滿洲國，並於最短期內即派遺公使駐紮長春，意大利此舉當然爲日本外交活躍及今年春天日本承認意國合併阿比西尼亞之當然結果。他滿洲國爲日本以侵略手段一手造成，在國際上并未取得國家地位，意大利此種行動，不僅違反國際正法，損傷中意邦交，並有失意大利之國際地位。現在此事頗使國慶驚訝，以先之以阿比西尼亞問題，繼之以偽滿洲國獲得西歐國家之承認，國際公法，日益凌夷，世界秩序，益無保障，此事在國際所能發生之影響，不致如何大，惟德意奧波等國，既聲氣相投，恐此數國必步其後塵。據柏林二十九日消息，德國官場表示目前不致立即承認偽滿，其所顧慮者，爲其在中國之利益甚多，不比中意關係之稀薄，以記者觀察，此言未必是事實之說，侵略陣線國家之步調齊一，爲今日之必然趨勢，縱英法能調停德意關係，未必能發生如何影響。

四、中蘇關係疑界迷離

自八一三虹橋事件發生後，中日戰場展至上海，蘇聯大使鮑格莫夫於匆忙之中，飛返莫斯科，一時神經過敏者，頗以中蘇關係必將絕大進展，尤以此時正式成立中蘇不侵犯條約之後，鮑大使之行蹤，自極引人注意。但鮑大使返莫斯科後，久無確實消息，已歷頗爲關心時

Original text of the article titled "Chongqing is our Ankaral", page 4

(Photo: Hung Ying Library, 2024).

Recently, the Hubei Provincial Government discovered corrupt officials during the anti-Japanese war, and Chairman Jiang recently ordered all provinces to punish corrupt officials severely. This corruption culture is just one of the most toxic bureaucratism in our country's politics. The revolution of more than 20 years has been greatly reduced because

use it cannot be eradicated.

This was just one example. After moving the capital, we hope that the National Government can show a more revolutionary spirit and sort out and clarify politics. Only with revolutionary politics can we irrigate the power of revolution. In the long-term war of resistance, we need his sup-

port, and in the end, victory cannot be achieved without him. The territory is shrinking daily, and the desire to kill the enemy is rising daily. We hope that the internal contradictions will be eliminated daily and the strength of unity will be consolidated daily. In all of this, we hope that the National Government will continue to move forward after moving the capital, and we hope that in the short term, we will start from Sichuan¹⁵, the base for national rejuvenation. 🌸

Notlar

¹ During the Republic of China, the Chinese translated Ankara as Angola.

² Yun Fu, “重庆: 我们的安哥拉 (Chongqing: Our Ankara)”, 统一评论周报 (Tongyi Pinglun Zhoubao) [United Review Weekly], Issue 4, No. 23, December 4, 1937, pp.1-4.

³ Shen Bao (申报), 中國的安哥拉 (China's Ankara), November 16, 1938, p.7, For instance see; Shen Bao (申报) [Shanghai News] “天府之國的四川 [Sichuan, the Land of Abundance]”, 1938.

⁴ Dàměi Wǎnbào (大美晚报), Sichuan, known as the capital of China: Panoramic view of China's Ankara (被稱為天府的四川 中國的安哥拉全貌), December 2, 1938, pp.7.

⁵ Dàměi Wǎnbào (大美晚报), Best wishes to China's Ankara (祝望中國的安哥拉), December 2, 1938, pp.7.

⁶ Yúlílín (余戾林), Sichuan is China's Ankara and Chengdu is the great fortress of resistance (四川是中國的安哥拉 成都是抗戰的大堡壘), 《大美晚报》 (Dàměi Wǎnbào), July 4, 1938, pp.8.

⁷ Xinan Zhoukan (西南周刊) [Southwest Weekly], “杂谈中国的安哥拉 [Discussion on China's Ankara]”, No. 4 (1938),

⁸ Mulin (木林), Yunnan is China's Ankara, the base of a revived nation (雲南是中國的安哥拉 是復興民族的根據地), 《大美晚报》 (Dà měi wǎnbào), February 24, 1939, pp.7.

⁹ Chinese: 统一评论 (Tōngyī pínglùn)

¹⁰ During the Republic of China, the Chinese translated Ankara as Angola.

¹¹ Author wrote as European War.

¹² The author has directly translated the Turkish pronunciation of the Chinese Constantinople instead of Istanbul. All Constantinopolis in the text has been changed to Istanbul.

¹³ The author has written Mustafa Kemal Atatürk only as Kemal. All Kemal's in the text have been corrected to Mustafa Kemal.

¹⁴ Influenced by the background of the times, the Chinese directly translated the Republican People's Party as the National Party or Nationalist Party.

¹⁵ Before 1939, Chongqing was under the jurisdiction of Sichuan Province. On May 5, 1939, the Nationalist government, which had relocated its capital to Chongqing, issued an order to upgrade Chongqing to a first-class city under the central government (i.e. a municipality directly under the central government), making it the first municipality directly under the central government.

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Global Development Initiative and China's Development Cooperation in the Middle East



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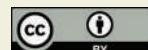
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ABSTRACT

In the last two decades, China has become progressively engaged in the development of the Middle East. Many Middle Eastern nations have gained substantial advantages and impetus from China's development cooperation and the Belt and Road Initiative. The Global Development Initiative, introduced by Beijing in 2021, represents China's perspective on world development. It strongly corresponds with the UN 2030 Agenda for Sustainable Development and the requirements of international development cooperation, establishing itself as a worldwide public benefit and offering renewed momentum for global development partnership. The Global Development Initiative has garnered favorable responses and backing from the international community, particularly from numerous Middle Eastern nations, and it significantly influences China's development cooperation with these states in the contemporary era. This program will support developmental strategies in Middle Eastern countries, using its diversified platform to advance the priorities of regional nations' development agendas and increase these states' capacity to achieve the 2030 Agenda for Sustainable Development.

Keywords: China, Global Development Initiative, international development cooperation, Middle East, sustainable development.

Introduction

GLOBAL DEVELOPMENT COOPERATION, intricately linked to global governance, especially global economic governance, includes many institutional frameworks, concepts, policies, and activities undertaken by international entities to address development issues, challenges, and dangers. The global community has broadly acknowledged that developing nations, including China and India, have profoundly altered the international development scene and have been instrumental in advancing international development cooperation.

In recent years, China has launched several de-

velopment initiatives, including the Belt and Road Initiative (BRI) and the Global Development Initiative (GDI), designed to tackle the international community's challenges concerning peace, development, security, and governance deficits. These efforts offer a strong incentive for establishing a society with a collective future for humanity (Zhang, 2023). On September 21, 2021, Chinese President Xi Jinping introduced the Global Development Initiative (GDI) for the first time during the 76th United Nations General Assembly. The GDI, informed by China's developmental experience, aims to address global development disparities, advance collective growth, and cultivate a community for shared prosperity (Shi, 2022).

The GDI embodies China's perspective on global development in the contemporary era and is congruent with the UN's 2030 Agenda for Sustainable Development and international development collaboration.

China engages in international development cooperation in the Middle East to fulfill its comprehensive development needs, strengthen bilateral relations, and play a pivotal role in global governance. Beijing's economic interests in the Middle East are swiftly growing, resulting in heightened engagement in the region's economic development.

The Middle East is a unique developing region, marked by persistent conflicts and instability, a uniform economic framework, and a vulnerable natural environment, which has experienced a significant "development deficit" over an extended period, posing a critical and challenging issue in global governance. Presently, Middle Eastern nations encounter numerous challenges pertaining to economic change, social stability, sustainable development, and geopolitical dangers. The primary focus in the Middle East is economic advancement. The inability to convert economies, developmental stagnation, and threats to livelihoods are the fundamental drivers of the region's unrest. The political issues in the Middle East cannot be properly understood without acknowledging their economic origins (Malik and Awadallah, 2011). The challenges and crises of political development in the

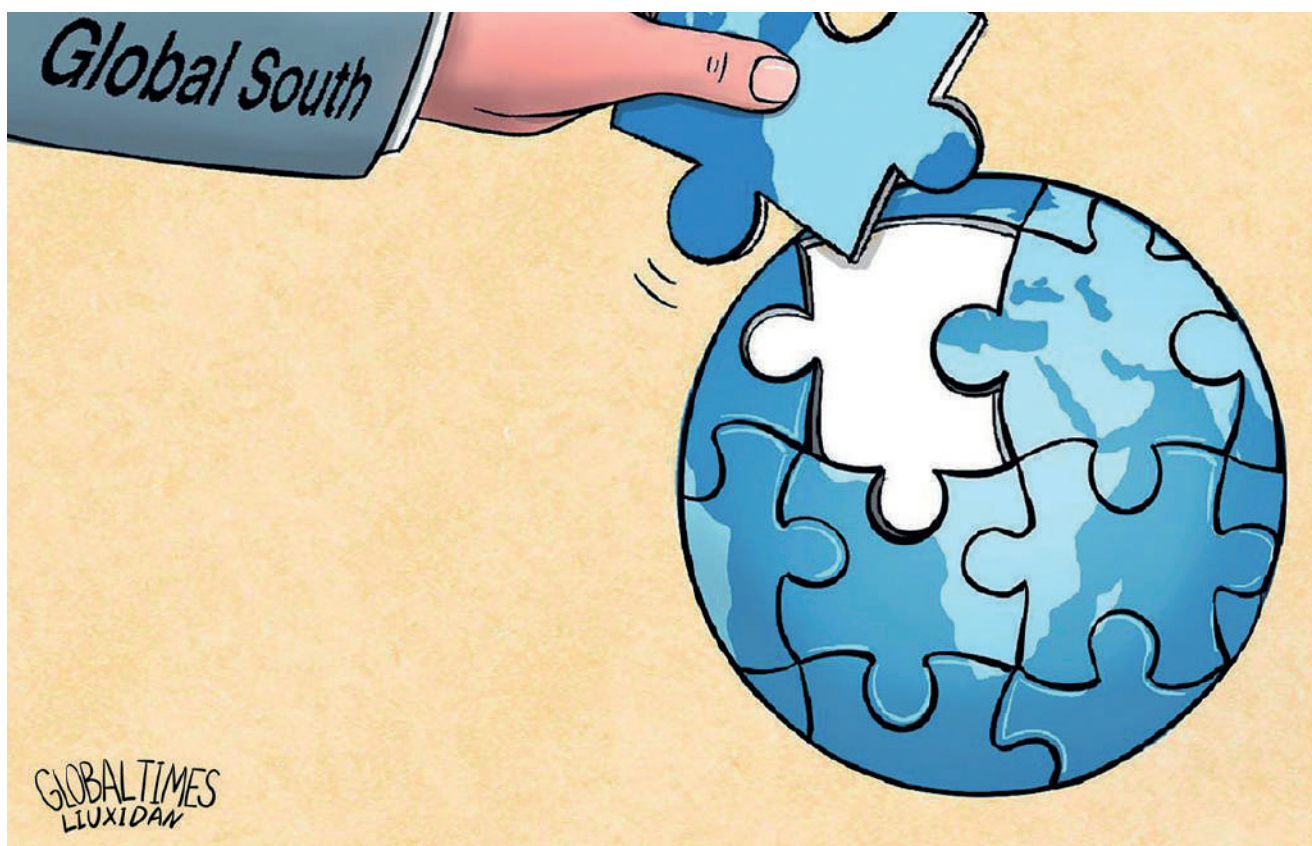
Middle East extend beyond mere democratization, and the question of democracy is not the most urgent of its present issues (Jiang, 2021). Middle Eastern countries can only gradually extricate themselves from their existing challenges by authentically surmounting developmental bottlenecks and attaining sustainable growth. This advancement will allow them to fundamentally tackle significant governance challenges, including volatile conflicts, terrorism, and the refugee crisis. Moreover, due to the underdeveloped status of many Middle Eastern nations, coupled with their precarious economic, social, and environmental structures, as well as restricted national governance capabilities, there exists a considerable dependence on financial, technical, and capacity support from the international community. Robust international development cooperation is essential for Middle Eastern nations to address their developmental issues and attain sustained advancement.

In what ways can the international community effectively augment development cooperation in the Middle East? What is China's role in regional development cooperation? China engages in international development cooperation in the Middle East to fulfill its comprehensive development needs, strengthen bilateral relations, and play a pivotal role in global governance. Beijing's economic interests in the Middle East are swiftly growing, resulting in heightened engagement in the region's economic development. The substantial energy imports, varied commercial relationships, and persistent ambitions of major countries have compelled Beijing to enhance its involvement in Middle Eastern administration, leading to the ongoing growth of China's extensive collaboration with the region. China and the Middle East are poised to establish a substantial economic partnership. China's interests are incongruent with the prolonged accumulation of developmental obstacles in the Middle East and the consequent regional turmoil.

Consequently, active engagement in Middle Eastern development is crucial for protecting these interests. China's development cooperation in the region will safeguard its energy security, regional stability, and overseas economic interests while enabling Beijing to disseminate its successful experiences in reform and development. This collaboration underscores China's distinctive attributes and accomplishments while reinforcing its image as a responsible global power. Rooted on the ideals of justice and reciprocal advantage, economic collaboration can deepen comprehension between China and Middle Eastern nations. It can also effectively clarify misconceptions within the international community and alleviate external ap-

prehensions regarding China's Middle East strategy (Wang & Yao, 2019).

China has commenced a more proactive and substantial involvement in international development cooperation, supported by its growing strength and capabilities. China has attained a position in this domain where it may take on a leadership role and must contemplate how to effectively execute its obligations as a rising power in global development (Li, 2019). China's principles, policies, and methodologies concerning overseas development assistance have facilitated this shift. Leveraging its experiences, China has established a novel model of international development cooperation that embodies Chinese features.



Various development initiatives led by China, including the Belt and Road Initiative and the Global Development Initiative, focus on the goal of building a future society common to humanity (Cartoon: Liu Xidan/Global Times, 2024).

This paradigm emphasizes enhancing the autonomy of recipient nations and implementing new development processes that receive favorable responses from both the recipient countries and the international community. China promotes global development through comprehensive consultation, collaborative contributions, and mutual benefits, resulting in the creation of several new mechanisms, such as the Asian Infrastructure Investment Bank, the New Development Bank, the Silk Fund, and the South-South Cooperation Assistance Fund, all designed to enhance development in diverse regions.

This article summarizes China's development cooperation practices in the Middle East over the past two decades and analyzes the significance and methodologies of the GDI in enhancing development cooperation between China and Middle Eastern nations, based on a new model of international development cooperation. This essay will concentrate on the development cooperation between China and Arab States, considering the diversity of countries in the Middle East.

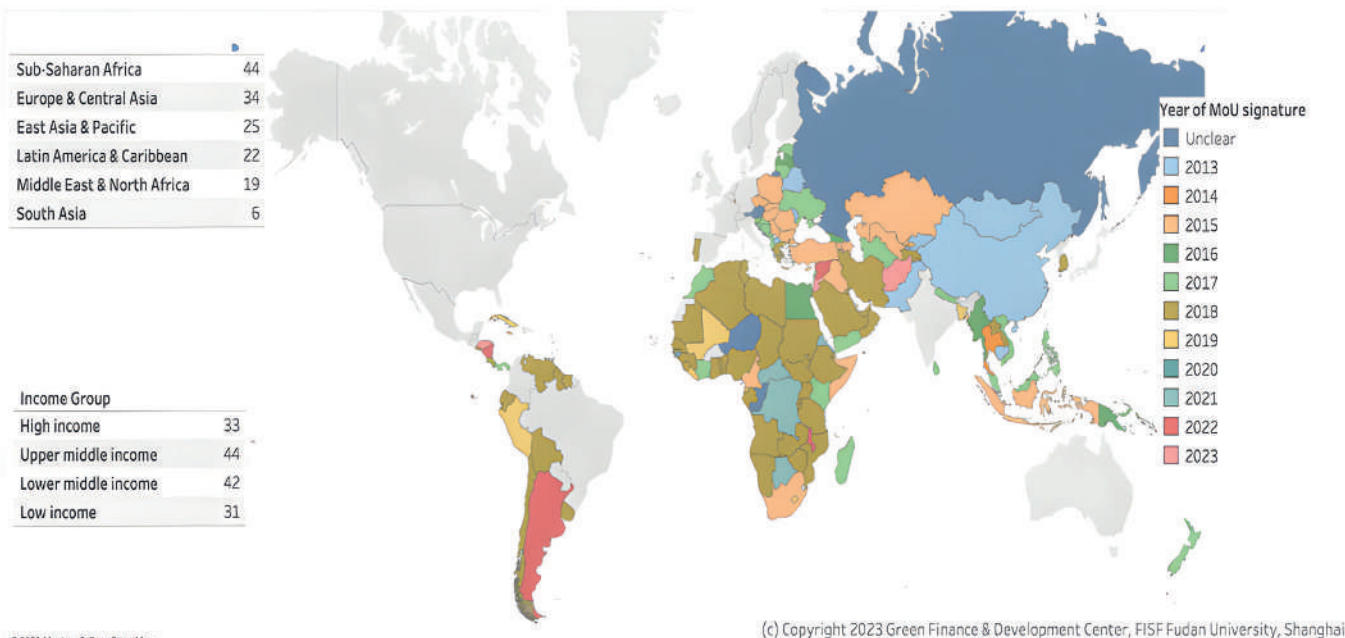
The GDI and the New Model of International Development Cooperation

In contrast to conventional development assistance, the new model of development cooperation emphasizes substantial collaboration centered on economics and trade, especially in economic infrastructure and manufacturing activities. This transition has enhanced the interplay among official aid, trade, and investment, with the objective of fostering industrial development. Regarding cooperation channels, there is a trend towards bilateral and multilateral collaborative development in the new model of development cooperation (Zheng, 2021). As the international development cooperation paradigm evolves, China has emerged as a

proponent and leader of a novel type of international development cooperation. Since the onset of the 21st century, China's international development cooperation model has progressively transitioned from development-oriented assistance to empowerment-oriented assistance (Zhao and Cai, 2024). China's international development cooperation not only delivers international public goods through the establishment of new platforms, such as the Belt and Road Initiative (BRI) and the Asian Infrastructure Investment Bank (AIIB), but also emphasizes enhancing the autonomous development capabilities of its partners. The GDI exemplifies the contemporary model of international development cooperation.

The GDI has emerged as a novel platform for international development cooperation, grounded in the principles and practices of the BRI, and functions as an international public good in this new era, offering renewed impetus for international development collaboration. Leveraging its practical experience and the demands of global development, China has launched the GDI, rejuvenating the international development agenda and providing initiatives and strategies for executing the UN's 2030 Agenda for Sustainable Development. The GDI prioritizes development, champions people-centered and inclusive growth, fosters innovation-driven progress, advocates for harmonious cohabitation between humanity and nature, and endorses action-oriented development (Xi, 2021). It implores the international community to prioritize development within the global macro-policy framework, offering enhanced and more focused assistance to developing nations. Additionally, it delineates a framework for national progress and international collaboration, establishing a definitive course for promoting global development projects. The GDI and the BRI exemplify China's development co-

Countries of the Belt and Road Initiative



As of December 2023, 151 countries have signed memoranda of understanding with China to engage in the Belt and Road Initiative (Graph: Fudan University, 2023).

operation efforts and international public goods, illustrating Beijing's revised development perspective and reestablishing development matters at the forefront of the global agenda. Beijing substantially aids international development cooperation via the GDI, which is closely aligned with the UN's 2030 Agenda for Sustainable Development and is crucial in advancing its global execution. China presents the GDI, an essential public product and cooperative platform that proposes collaborative initiatives and projects across eight critical domains: poverty alleviation, food security, epidemic response and vaccination, development financing, climate change and sustainable development, industrialization, digital economy, and interconnectivity (Yao, 2022).

Subsequent to the official inauguration of the GDI

in September 2021, Chinese officials delineated its theoretical and practical importance at the opening ceremony of the Second UN Global Conference on Sustainable Transport, the 2022 World Economic Forum, the 2022 Annual Meeting of the Boao Forum for Asia, the High-level Dialogue on Global Development, and the G20 Summit. To promote international development cooperation, China has effectively incorporated the Global Development Initiative (GDI) into established multilateral development organizations, including the China-UN Peace and Development Fund, the BRICS cooperation mechanism, the South-South Cooperation Assistance Fund, and the Global Crisis Response Group on Food, Energy, and Finance (GCRG) under the leadership of the UN Secretary-General (Haenle & Sher, 2023).

In January 2022, China formed the “Group of Friends of the GDI” under the auspices of the United Nations, signifying its dedication to partner with UN member states and the United Nations Development System. Disseminating these significant experiences globally is essential for the execution and institutionalization of the GDI. The “Group of Friends of the GDI” seeks to accelerate the execution of the UN’s 2030 Agenda for Sustainable Development, enhance progress in developing countries, and so reestablish balance in the global development landscape (Qiao, 2023).

Chinese Foreign Minister Wang Yi advocated for the revitalization of global collaboration to execute the 2030 Agenda for Sustainable Development. He underscored the necessity of establishing a conducive climate for expedited global development, fostering an equitable and balanced global partnership for development, executing the GDI, and facilitating the attainment of the Sustainable Development Goals (SDGs).

During the high-level videoconference of the “Group of Friends of the GDI” in May 2022, Chinese Foreign Minister Wang Yi advocated for the revitalization of global collaboration to execute the 2030 Agenda for Sustainable Development. He underscored the necessity of establishing a conducive climate for expedited global development, fostering an equitable and balanced global partnership for development, executing the GDI, and

facilitating the attainment of the Sustainable Development Goals (SDGs). In June 2022, the China Center for International Knowledge on Development (CIKD) published its first Global Development Report, offering an extensive examination of the advancements and obstacles related to the 2030 Agenda for Sustainable Development. The paper clarified the fundamental concepts, essential principles, implementation strategies, and initial programs of the GDI, while also suggesting multiple recommendations across eight critical areas of the effort. In June 2022, during the High-Level Dialogue on Global Development, China presented 32 pragmatic measures to advance the GDI. Chinese President Xi Jinping declared the amalgamation of the South-South Cooperation Assistance Fund with the Global Development and South-South Cooperation Fund, augmenting the overall commitment by an extra \$1 billion, so raising the total to \$4 billion for the fund. Subsequently, China committed to creating a \$10 billion fund to facilitate the execution of the GDI. In September 2022, Wang Yi presided over a ministerial summit of the “Group of Friends of the GDI” in New York, which drew senior delegates from 60 nations and prominent leaders of United Nations entities. Wang Yi articulated China’s willingness to strengthen strategic collaboration with the United Nations Development System and proposed seven supplementary actions to actualize the 2030 Agenda for Sustainable Development. The initiatives encompassed the publication of the inaugural project list in the GDI Pool, the “Special Action for Food Production,” the “Global Clean Energy Partnership,” the “Smart Customs, Smart Borders, Smart Connectivity” collaboration, the World Digital Education Consortium, and the open data sharing initiative associated with China’s “Science Satellite 1 for Sustainable Development” (The Foreign Ministry

of PRC, 2022). In November 2022, Beijing officially inaugurated the Global Development Promotion Centre and subsequently established the Global Development Promotion Center Network in January 2023 to cultivate a Global Development Knowledge Network that utilizes China's views and contributions to tackle development difficulties.

The GDI emphasizes development as a fundamental component of the global macro-policy framework. It fosters collaborative contributions from international partnerships for development, manages multilateral development cooperation, and expedites progress towards the 2030 Agenda for Sustainable Development while endeavoring to establish a community with a shared future for global development. The GDI has successfully cultivated a global consensus to advance development collaboratively and has encouraged the international community's renewed emphasis on global de-

velopment and reaffirmation of the 2030 Agenda. It effectively addresses global difficulties and the developmental requirements of rising economies, acting as a "catalyst" for the attainment of the Sustainable Development Goals by 2030 (CIKD, 2022). The GDI's implementation methods are consistently enhanced, with practical collaboration increasingly concentrating on pivotal concerns like food security, poverty reduction, and energy security. The Global Development Promotion Center is operating efficiently, and the GDI project portfolio is growing, now including more than 200 initiatives.

The GDI has garnered extensive backing from the international community owing to its robust alignment with the developmental requirements of nations globally, especially those that are developing. It substantially facilitates the advancement of the 2030 Sustainable Development Goals.



Antonio Guterres, the UN Secretary-General, has lauded the GDI, underscoring its vital importance in furthering the 2030 Agenda for Sustainable Development, enhancing global equity, and facilitating equitable sustainable development (Photo: China Daily, 2023).

Antonio Guterres, the UN Secretary-General, has lauded the GDI, underscoring its vital importance in furthering the 2030 Agenda for Sustainable Development, enhancing global equity, and facilitating equitable sustainable development. Siddharth Chatterjee, the United Nations Resident Coordinator in China, alongside representatives from the Food and Agriculture Organization (FAO) and the United Nations Industrial Development Organization, has praised the GDI's beneficial influence on the UN 2030 Agenda for Sustainable Development, emphasizing its function as a potent catalyst for global development. As of 2023, over 100 nations have expressed their endorsement for the GDI, with 70 nations participating in the "Group of Friends of the GDI." The principal aims of the GDI currently encompass improving the global perception of the execution of the 2030 Agenda for Sustainable Development, securing backing from pivotal partners and the United Nations development system, and augmenting investment in international development assistance (Mao, 2022).

The GDI has received favorable feedback and backing from the international community, including Middle Eastern nations. By 2022, 17 Arab states voiced their support for the GDI, and 12 Arab states became members of the "Group of Friends of the GDI." In June 2022, leaders from Egypt, Algeria, and other countries engaged in the High-level Global Development Dialogue. China will partner with Arab nations to execute the GDI, establish a consensus on development, adhere to the predetermined course of action, attain early successes, aid Arab states in enhancing the livelihoods of their citizens and bolstering their capacity for autonomous development, and realize the United Nations 2030 Agenda for Sustainable Development (The Foreign Ministry of PRC, 2022).

China's Engagement in Development Cooperation in the Middle East

In addressing China's Middle East diplomacy, Chinese President Xi Jinping has underscored the fundamental principles of peaceful development: "The Middle East confronts the pressing challenge of eradicating conflict and resolving developmental issues. China's Middle East policy addresses the populace's profound aspiration for peace and prosperity in the region while supporting the rightful assertions of Arab governments on the world stage. We are ready to assume a more significant role in fostering regional peace and stability" (Xi, 2018). Simultaneously, China's diplomatic initiatives emphasize the correlation between growth and peace. President Xi emphasized that the key issue driving the unrest in the Middle East is development and that the definitive solution is on attaining sustainable development (Xinhua Agency, 2016).

The most effective way to address the Middle East's security issue is through growth. The development measures put out by China correspond with the genuine and pragmatic requirements of Middle Eastern nations.

The most effective way to address the Middle East's security issue is through growth. The development measures put out by China correspond with the genuine and pragmatic requirements of Middle Eastern nations (Li, 2021, 3). In light of the substantial economic development issues in the region and their considerable effects on regional peace and

security, China emphasizes development by proactively offering aid and concentrating on enhancing people's livelihoods. This strategy promotes regional economic growth and cultivates an atmosphere favorable to the peaceful resolution of disputes. China promotes regional governance principles that foster development and peace, encompassing the collaborative establishment of the Belt and Road Initiative in the Middle East, provision of development aid, support for post-conflict reconstruction in regional nations, enhancement of governance capabilities of Middle Eastern administrations, strengthening of human resources training, and advancement of infrastructure connectivity (Sun & Zhang, 2019). China invests in economic connections with the Middle East and participates in regional development governance through three principal mechanisms: trade, investment, and capacity-building aid. These initiatives seek to augment the capacity of regional nations for autonomous development, signifying a novel paradigm of international development cooperation. China is increasingly im-

porting a wider range of non-energy commodities from the Middle East for mutual benefit; its investments in the region are consistently rising; and its help to Middle Eastern nations, offered without political stipulations, has also grown substantially. Studies demonstrate that China's foreign direct investment (FDI) has significantly facilitated sustained economic growth in Saudi Arabia and other Middle Eastern countries (Asiri et al., 2023). The BRI aims to rectify economic shortcomings in infrastructure, finance, technology, and other sectors within the region, thereby fortifying the foundations for economic growth and sustainable development.

Several fundamental elements predominantly illustrate the pragmatic trajectory of development cooperation between China and Middle Eastern nations. China is progressively offering development assistance to these nations, facilitating reconstruction in post-conflict areas, and tackling essential challenges such as poverty, unemployment, water resource management, and fundamental livelihood security.



Chinese and Egyptian workers are working together on the construction of the new capital, which is not only a key project of the Belt and Road Initiative but also the largest project Chinese companies are building in Egypt (Photo: Xinhua, 2023).

Secondly, China seeks to enhance its development assistance to empower regional nations by active involvement in infrastructure development, dissemination of best practices in economic planning, attraction of foreign investment, and establishment of special economic zones. This strategy aims to augment the developmental capabilities of these nations. Third, Beijing aims to promote mutually advantageous collaboration in new energy and developing technologies. It aids the Middle East in establishing new infrastructure and promoting innovative industrialization, therefore facilitating the change and development of regional nations. China asserts that the vigilant engagement and proactive involvement of the international community are crucial for reinstating political stability and rejuvenating the economy in the Middle East. Beijing has provided low-interest loans to Middle Eastern nations via the National Development Bank and the Export-Import Bank of China, employing adaptable repayment strategies.

China persistently executes aid initiatives in Middle Eastern nations, encompassing the development of highways, bridges, ports, stadiums, international convention centers, waterways, dams, factories, schools, and hospitals.

Consequently, China diligently executes aid projects in nations confronting developmental obstacles or instability, mitigates debt loads, and participates in international development initiatives under the aegis of the United Nations and the World Bank. Over the past twenty years, China has significantly

contributed to the post-war reconstruction of Iraq and Syria, provided development assistance to Palestine, and supported economic recovery initiatives in Egypt and other transitional nations. China persistently executes aid initiatives in Middle Eastern nations, encompassing the development of highways, bridges, ports, stadiums, international convention centers, waterways, dams, factories, schools, and hospitals. The total number of medical teams deployed in Arab nations has consistently surpassed 400. Subsequent to the Arab Spring, China has provided substantial support to countries undergoing transition in the area. For example, it has allocated 450 million yuan in aid to Egypt, 100 million yuan in non-repayable assistance to Yemen, and 30 million yuan in humanitarian material support to Syrian refugees in Lebanon and Jordan. Furthermore, China augmented its donations to the United Nations Relief and Works Agency for Palestine Refugees (UNRWA), providing an extra \$2.35 million for the assistance of Palestinian refugees in August 2018 (People's Daily, 2018). Moreover, China Gezhouba Group constructed the sewage treatment facility in Suwaila City, Wasit Province, Iraq; PetroChina established the natural gas processing plant in Hafaya, Iraq; China Construction developed the Nasiriyah Airport in Iraq; China Machinery erected the Salahaddin Fuel Gas Power Station in Iraq; and China Electric Power Company built 679 Iraqi Model Schools in Iraq, all of which catered to the essential needs of the Iraqi populace and generated substantial social advantages. Concurrently, China emphasizes ongoing developmental aid to Middle Eastern nations via technical cooperation initiatives and personnel training, aiming to provide essential technology and human resources for sustainable development, thereby augmenting the autonomous development capabilities of recipient countries and contributing to the economic stability of the Middle East region (Sun et al., 2018).



Representatives of Arab countries attend the opening ceremony of the 10th Ministerial Conference of the China-Arab States Cooperation Forum in Beijing on May 30, 2024 (Photo: Xinhua, 2024).

Food security and agriculture are key concerns for the advancement of Middle Eastern nations. The Arab states encounter a disproportionate food supply and demand framework, characterized by escalating food security issues and sluggish agricultural advancement. The Arab region exhibits concentrated food insecurity, and the nations within this area face difficulties in implementing effective regional food security systems to address these common concerns (Zhang, 2020). China has assisted in numerous water conservancy and agricultural initiatives in Sudan, Egypt, Algeria, Morocco, Mauritania, and other countries, facilitated agricultural technology exchanges within the China-Arab States Cooperation Forum (CASCF), and bolstered the capabilities of Arab nations in agricultural governance and food security. During the inaugural China-Arab States Summit in 2022, Beijing committed to aiding its Arab counterparts in bolstering food security and augmenting overall agricultural production capacity. This encompasses the establishment of five collaborative laboratories for contemporary agriculture, the

execution of 50 demonstration initiatives for agricultural technical collaboration, and the deployment of 500 agricultural technical specialists to assist regional nations in augmenting food production, enhancing storage capabilities, and improving agricultural productivity. Additionally, a “green channel” will be established to facilitate the import of high-quality agricultural products from Arab states.

In the domain of health governance, the deployment of medical teams constitutes China's most significant type of health assistance in the Middle East. China has significantly dispatched numerous medical teams to Morocco and a substantial contingent of medical personnel to Algeria. In post-conflict nations, support for hospital construction, provision of medical equipment and pharmaceuticals, and deployment of medical personnel are vital elements of China's developmental assistance. In response to the 2020 epidemic, China promptly dispatched medical professionals to the Middle East to exchange knowledge and technologies for viral mitigation and to provide extensive support.

China provided Iraq, Saudi Arabia, and Israel with diverse help, including the development of new coronavirus diagnostic laboratories and isolation hospitals. Chinese expert teams visited Algeria, Iran, and Tunisia to disseminate China's anti-epidemic knowledge, offer training in preventative and clinical protocols, and improve the monitoring, response, and treatment capacities of Middle Eastern nations. Furthermore, China endorses collaborative research and the sanctioned manufacturing of vaccines by Chinese enterprises while simultaneously advocating for autonomous vaccine development in the Middle East (Liu and Li, 2022). The 9th Ministerial Meeting of the China-Arab States Cooperation Forum (CASCF) in 2020 released a joint declaration affirming support between China and Arab states in combating the disease.

An increasing number of Middle Eastern nations are obtaining concrete advantages and development aid from China's developmental assistance and the collaborative implementation of the Belt and Road Initiative (BRI).

China implements a significant portion of its development assistance to the Middle East through the United Nations framework, alongside bilateral methods. China engages in regional investments and aids in revitalizing the local economy through collaboration with diverse stakeholders. Additionally, it endorses international organizations like the United Nations, the International Monetary Fund, and the World Bank in enhancing their involvement in regional economic development. In the realm of refugee governance, China

and the UN Refugee Agency (UNHCR) have cultivated mutual trust via collaboration and are dedicated to enhancing the efficacy of UNHCR's refugee assistance initiatives. Beijing has been a significant contributor to the agency's international humanitarian efforts, sustaining cooperation in promoting refugee legislation and acquiring relief supplies. In reaction to the worsening refugee crisis in the Middle East, China has augmented its support for refugees, facilitated their relocation in the region through material help, and enhanced conditions in refugee camps (Xing, 2016). China predominantly extends multilateral aid to Middle Eastern refugees via international entities such as the World Food Programme (WFP), the World Health Organization (WHO), and the United Nations International Children's Emergency Fund (UNICEF). These organizations have offered diverse sorts of aid to Syrian and Iraqi refugees, encompassing food, medication, financial support, materials, and construction (Xing & Yu, 2020).

An increasing number of Middle Eastern nations are obtaining concrete advantages and development aid from China's developmental assistance and the collaborative implementation of the Belt and Road Initiative (BRI). This relationship offers a distinctive chance to improve the region's infrastructure, foster industry and economic transformation, and elevate the livelihoods of its inhabitants. In this new era, China prioritizes the establishment of structured cooperation mechanisms with Middle Eastern countries, providing collaborative platforms that promote mutual economic development. This strategy offers policy and institutional assurances for regional economic stability and development while aiming to foster holistic growth across the region. The collaborative development of the BRI, the advancement of the China-Arab States Cooperation Forum (CASCF) to a summit tier, and the 25-year Comprehensive Cooperation Agreement between China and Iran indicate a growing

institutionalization and enduring commitment to bilateral collaboration. China's development cooperation with Middle Eastern countries has enhanced the economic development environment and foreign trade conditions in the region, alleviated pressures on infrastructure, finance, and livelihoods, bolstered the independent development capacity and confidence of regional nations, and contributed to peace and stability in the area.

The Belt and Road Initiative announced by Beijing in 2013 garnered an affirmative reaction from Arab nations. By June 2022, China and Arab nations had held nine ministerial meetings and 17 senior official meetings. The CASCF Ministerial Meeting takes place every two years. At the 6th Ministerial Meeting of the CASCF in 2014, China presented the "1+2+3" cooperation framework, comprising one main focus (energy cooperation), two priority domains (infrastructure, trade, and investment facilitation), and three advanced technology sectors for innovation (nuclear energy, aviation satellites, and new energy). Furthermore, China has suggested to elevate China-Arab commerce to

\$600 billion within the next ten years and to augment the volume of Chinese investment in the Arab region to exceed \$60 billion (Xinhua Agency, 2014). In 2016, the Chinese government published its inaugural Arab Policy Paper, emphasizing development cooperation as a fundamental element. In subsequent years, the Chinese government instituted many additional mechanisms, including the China-Arab States Technology Transfer Center, an Arab training facility for the peaceful application of nuclear energy, and the China-Arab Clean Energy Training Center. In January 2016, during his visit to the Middle East, President Xi Jinping declared the creation of \$15 billion in special loans for regional industrialization, in addition to \$10 billion in commercial loans and \$10 billion in concessional loans for Arab nations. He additionally advocated the establishment of a \$20 billion mutual investment fund, substantially augmenting support for the economic change in the Middle East (Xinhua Agency, 2016). During the 8th Ministerial Meeting of the CASCF in 2018, both parties released the Declaration of Action on China-Arab States Cooperation within the framework of the BRI.



The Al Dhafra PV2 Solar Power Plant, built by a Chinese company in the United Arab Emirates, was completed in November 2023 (Photo: Xinhua, 2024).

China declared intentions to import products exceeding \$8 trillion over the next five years and to allocate over \$750 billion for global foreign investment. Additionally, it introduced a specialized initiative for economic rehabilitation focused on industry revitalization and formed a China-Arab States Banking Consortium with \$3 billion allocated for financial cooperation (CASCF, 2018). According to official statements, China will persist in employing special and concessional loans to facilitate the industrialization of the Middle East, encouraging the participation of Chinese firms in the development and construction of industrial parks, investment operations, and industrial clusters. The 9th Ministerial Meeting of the CASCF in 2020 ratified the Amman Declaration and the implementation plan for 2020–2022, committing to enhance the strategic relationship between China and Arab states and to establish a China-Arab community with a shared future in the new era. Beijing has entered into cooperation agreements under the Belt and Road Initiative with all 22 Arab nations and the Arab League.

In December 2022, the China-Saudi Arabia Summit, the inaugural China-Arab States Summit, and the first China-GCC Summit were held in Riyadh, Saudi Arabia. President Xi Jinping offered eight significant cooperation initiatives designed to enhance pragmatic engagement between China and Arab nations, delineating essential pathways for bilateral cooperation. The initial initiative, named “Supporting Common Action for Development,” emphasized development cooperation. Regional development governance is also intricately connected to Initiatives II to V—“Joint Action on Food Security,” “Joint Action on Health,” “Joint Action on Green Innovation,” and “Joint Action on Energy Security.” The Chinese government intends to partner with Arab states to execute development assistance projects, allocating 5 billion RMB to support 30 qua-

lifying projects in the Arab region as part of the GDI project pool. Furthermore, China will enhance credit support to Arab states, provide zero-tariff treatment for 98% of products from the least developed countries in the region, and extend humanitarian and reconstruction aid to Palestine, Yemen, Lebanon, Syria, and others (The State Council of the PRC, 2022). The concurrent conduct of these three summits produced significant outcomes and signified a new era in China-Arab relations.

Mechanisms for the GDI to Promote Development Cooperation between China and the Middle East

The Middle East is pivotal to the global development deficit, and the nations within this region are inherently suited for the execution of the GDI (Li et al., 2024). Given the diverse national circumstances, institutions, resource availability, and developmental trajectories, GDI-oriented initiatives in the Middle East must be instrumental in reinstating development issues at the forefront of regional agendas (Wang et al., 2024).

First, the concepts of GDI should be used to lead the development transformation of the Middle East region and further promote the shaping of the development concepts of Middle Eastern countries. Confronted with challenges such as economic structure, environmental conditions, and social stability, Middle Eastern countries ardently endorse sustainable development and have progressively incorporated international development concepts and knowledge into their strategies and actions. The BRI and GDI are closely aligned with initiatives such as Saudi Arabia’s “Vision 2030,” the UAE’s “We the UAE 2031,” and the “Development Strategy for the Next 50 Years.” These strategies prioritize innovation-driven growth and harmonious coexistence with nature, offe-



By adopting a people-centered approach, the Global Development Initiative aims to promote harmony between nature and human beings, promote shared development, and offer new solutions to development challenges (Illustration: China Daily, 2024)

ring conceptual guidance for both parties to enhance developmental collaboration and execute pragmatic measures. Middle Eastern nations are actively investigating new developmental pathways and models, and the GDI has unveiled new prospects for them.

The concept of people-centered and inclusive governance of livelihoods is essential for the economic and social stability of the Middle East. The development strategies, projects, and actions of Middle Eastern countries must address the challenges affecting economic stability, meet the development needs of the general population, and promote social equality and inclusion. Conflict and instability profoundly influence the development of the Middle East. Therefore, it is both relevant and necessary to adopt a pragmatic approach to development that prioritizes growth and drives innovation. Regional countries should firmly establish the principle of prioritizing development and seize genuine opportunities to foster growth through innovation.

In the future, China and Middle Eastern countries

should further strengthen the alignment of their development strategies based on integrated ideas, providing a clear plan and direction for the implementation of the 2030 Agenda for Sustainable Development. Effective coordination of economic, social, and environmental objectives requires the establishment of a long-term framework for economic policymaking as well as a high-level coordination mechanism capable of mobilizing all relevant sectors to integrate sustainable green growth objectives into broader development plans. Additionally, it involves monitoring and evaluating the progress of green growth to assess the effectiveness of existing policies, establishing institutional mechanisms to ensure the participation of all stakeholders at every stage, fostering public-private partnerships to create an enabling environment for decarbonization, and supporting investment in and the use of new and green technologies. Moreover, addressing the needs of vulnerable groups in society is crucial to ensuring no one falls behind (UNESCWA, 2022).

Secondly, the GDI is a critical mechanism for promoting the implementation of the 2030 Agenda for Sustainable Development in the Middle East. It seeks to enhance its diversification platform to promote the priority development agendas of regional nations. The GDI seeks to accelerate the implementation of the 2030 Agenda for Sustainable Development, emphasizing the importance of action-oriented and effective governance. It offers enhanced public goods related to financing and provides a platform for international development cooperation, thereby generating new momentum for the implementation of the 2030 Agenda in developing regions. The GDI actively engages UN development agencies as key partners in fostering cooperation and establishing exemplary roles that encourage collaboration among other countries and institutions, with the “Group of Friends of the GDI” countries serving as the primary participants (The Foreign Ministry of PRC, 2022).

China could actively support poverty reduction efforts in regional countries through international cooperation projects, sharing best practices, and providing training in poverty alleviation.

China should integrate Middle Eastern nations into the multilateral institutional framework of the GDI to guarantee the safeguarding of rights and equitable power distribution in knowledge exchange, development strategy formulation, and agenda setting. China, on the other hand, ought to support the efforts of United Nations multilateral agencies in order to offer significant advantages to

local nations in terms of development financing, project implementation, and governance. Given the varying levels of development among these countries, many face significant financing gaps and lack sufficient experience in managing development projects and governance. Therefore, the international community must provide external support for development mechanisms to facilitate their transformation. For instance, China could actively support poverty reduction efforts in regional countries through international cooperation projects, sharing best practices, and providing training in poverty alleviation. Furthermore, “joint action on food security” could enhance food security and comprehensive agricultural production capacity in Arab states. As China increases its financial support for regional countries, it should also promote high-quality, low-cost, and sustainable infrastructure investments. Furthermore, it should encourage and assist these countries in mobilizing domestic resources for development, thereby enhancing their capacity and momentum for sustainable development.

Third, it is essential to promote the establishment of a global partnership for development between China and Middle East countries while enhancing the capacity of regional states to implement the 2030 Agenda for Sustainable Development within the framework of the GDI. Inequalities in global economic governance structures, unfulfilled Official Development Assistance (ODA) commitments, and inadequate technology transfer and capacity-building in developing countries pose significant challenges for Middle Eastern nations striving to achieve sustainable development goals. While the United Nations Resident Coordinators and the League of Arab States play crucial roles in fostering international cooperation and partnership-building,

there is a pressing need for broader collaboration among Middle Eastern countries in the areas of technology, finance, and capacity-building. China should currently integrate the new platform of United Nations development agencies with the GDI to enhance the capacity of Middle Eastern countries in governance related to digital technology, industrialization, energy transformation, and the global partnership for development.

Enhancing the application of digital technology is essential for the rapid development of the digital economy. Digital technology has become a significant factor influencing global development. It is increasingly crucial to promote international development cooperation and achieve the Sustainable Development Goals (SDGs) by 2030. The digital transition offers vital opportunities for the economic and social development of Middle Eastern countries, facilitating a transformation in production methods, empowering governments and populations, and improving the effectiveness of public services. Cooperation between China and Arab states in infrastructure is expanding into high-tech and digital sectors, with a focus on establishing a landscape that includes information technology, communications, and aerospace (Ding and Zhu, 2022). China should promote technology transfer and knowledge sharing to foster inclusive development and economic transformation in the region.

Through improved policy coordination and capacity-building, China aims to foster cooperation in new industrialization and enhance the integration of regional nations into global industrial, value, and supply chains. China has strengthened its institutional collaboration with the United Nations Development System, the League of Arab States, the Gulf Cooperation Council (GCC), and other platforms to cultivate industries with comparative advantages in the Middle East. This ini-

tiative intends to expedite industrialization, optimize the integration of global and regional value chains and supply chains, and offer further development opportunities and impetus.


It is essential to accelerate the development of renewable energy and promote the transformation to green energy. China holds a leading position in the entire industrial chain of clean energy development and could enhance cooperation with Middle Eastern countries to expedite the transition to a green economy, thereby achieving both economic growth and environmental protection goals. The China-Arab Clean Energy Training Center, as outlined in the China-Arab States “Joint Action on Energy Security,” aims to enable Chinese energy enterprises and financial institutions to participate in renewable energy projects within Arab states. This initiative aims to foster research and development collaboration in energy science and technology with Arab partners and to promote the coordination of energy policies (The State Council of PRC, 2022). Constructing a new framework for three-dimensional energy cooperation is a crucial strategy for deepening energy collaboration between China and Middle Eastern countries, enabling a joint response to the energy crisis, and safeguarding energy security in the current context. Establishing a fair and equitable global energy governance system that is balanced and inclusive holds significant theoretical and practical importance (Li et al., 2024).

The GDI Network seeks to foster solidarity and collaboration among regional nations, especially Arab states, while strengthening global development partnerships in the region. This initiative aims to cultivate a more conducive environment and lay a robust foundation for regional developmental transformation and governance enhancement.

On the eve of the first China-Arab States Summit in December 2022, the Chinese Ministry of Foreign Affairs issued a report on China-Arab cooperation in the new era. The report outlines the primary pathways for constructing a China-Arab community with a shared future, focusing on deepening pragmatic cooperation, enhancing strategic mutual trust, co-creating development and prosperity, promoting peace and stability, and expanding cultural exchanges. China's GDI emphasizes development as its core mission, strengthens the national development capacities of Arab states, addresses regional development concerns, and seeks to mitigate deficits in development, security, and governance. This initiative is conducive to promoting peace and stability in the Middle East and has garnered support and appreciation from Arab states. The China-Arab States Summit proposed eight major cooperation initiatives aimed at fostering pragmatic collaboration to achieve common, transformative, and sustainable development, thereby building a community with a shared future and creating a comprehensive blueprint for China-Arab development cooperation. The GDI will drive Arab states from "blood transfusion" to "hematopoietic," from dependent development to independent development, and promote regional integration in the Middle East (Sun & Zhang, 2022, 98).

Conclusion

The Middle East is currently facing significant challenges related to security, development, and governance, as it stands at a critical juncture between peaceful progress and disorder. Compared to other regions in the world, the development issues in the Middle East are particularly prominent, and international development coo-

peration is indispensable for regional countries to address development challenges. Western powers continue to assert their dominance in the region, fostering both alliances and confrontations while viewing China as a primary competitor. This perspective aims to limit Beijing's involvement in the Middle East, compelling regional countries to choose sides and undermining mutually beneficial cooperation between China and Middle Eastern countries. In response to this situation, China has proactively sought to strengthen friendly and cooperative relations with all nations in the Middle East, promoting peace, development, and stability in the region. China advocates for genuine multilateralism grounded in the UN Charter and actively positions itself as a peacebuilder, development contributor, and defender of order in the Middle East. In this context, the GDI will effectively promote international development cooperation between China and regional countries and contribute to the comprehensive development of the Middle East. Through development cooperation, China and Middle Eastern countries emphasize a shared vision of international order and global governance, working together to dismantle barriers to peace and development in the region and striving to establish a global development community with a shared future. 

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Europe: Rescue against US-led de-industrialization



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ABSTRACT

Since the turn of the millennium, a new practice has emerged: the new, deregulated US capital players, which are still officially considered “shadow banks”, are buying existing companies in Europe. Private equity investors such as Blackstone and Katch Investment Group (KKR) specialize in medium-sized, unlisted companies. BlackRock, Vanguard, State Street, Capital Group, Fidelity & Co. are now the leading owners of the most important companies and banks in Germany, France, Belgium, Luxembourg, the UK, the Netherlands and, incidentally, Switzerland. The strategic decisions - restructuring, sale of parts of the company, job cuts, relocations abroad - are mainly made in the USA, in consultation with the European Commission. Most of the profits go to the USA, while the Americanization of working conditions (job patterns, gig working, working poor) is causing real wages to fall throughout the EU. As a result, the EU's share of global GDP has fallen from its former peak of around 25% to 15%, while the USA's share has since risen back to its former level of 25%. The re-industrialization of Germany is also under US control.

Keywords: Europe, capitalism, deindustrialization, industry, re-industrialization.

Introduction

EMMANUEL MACRON, THE RICH EX-BANKER, made a promise when he took office as French President in 2017. He imitated the newly elected US President Donald Trump: “I will make France great again”! He surrounded himself with leading US capital players such as BlackRock, KKR and McKinsey and met with them and US President

Donald Trump for dinners at the White House in Washington (NSJ, 2018). Some years after in May 2024, during a state visit to Germany, he warned to an elaborately staged youth festival with young music bands on the largest square in the East German city of Dresden: “Our Europe can die!” He invoked the slogan of the French Revolution “Liberté, Egalité, Fraternité” - liberty, equality, fraternity - against the mortal enemy Russia!

But one month later, in the French parliamentary elections, Macron's long foreseeable downfall came. This capitalist autocrat thus stands as an example for the governments of rich European countries such as France, Germany, England,

Belgium and the Netherlands in particular: As in the model state of the USA, they have all lost the approval of the majority of the population, most recently through the war budgets to support the US proxy war in Ukraine against Russia.



"With the Marshall Plan, the USA promoted re-industrialization in Western Europe after 1945. However, the funds were only available when left-wing, communist, anti-fascist parties and nationalist politicians such as Charles de Gaulle were driven out of government" (Photo: National Archives, 2024).

Pre-history: Marshall Plan with NATO

With the Marshall Plan, the USA promoted re-industrialization in Western Europe after 1945. However, the funds were only available when left-wing, communist, anti-fascist parties and nationalist politicians such as Charles de Gaulle were driven out of government. In Greece, the money only flowed when the US military bombed the anti-fascist liberation movement and reinstated the monarchy. The Marshall Plan primarily promoted the sale of US products, the pegging of currencies to the dollar, and the establishment of branches of leading corporations, banks and consulting firms from the USA, including Hollywood culture.

The German and European entrepreneurs and bankers, including those in occupied and militarily neutral Western, Northern, and Southern Europe, including Switzerland, as well as those from the USA itself, who were accomplices of the Nazi occupiers - they all went unpunished. This anti-communist policy was secured by hard power, by the US-led military alliance NATO, reinforced by an increasing number of US military bases in the growing number of NATO member states.

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hern Europe, including Switzerland, as well as those from the USA itself, who were accomplices of the Nazi occupiers - they all went unpunished. This anti-communist policy was secured by hard power, by the US-led military alliance NATO, reinforced by an increasing number of US military bases in the growing number of NATO member states (Rügemer, 2024b).

In Western Europe, especially in the “Western showcase”, the provisional separate state of the Federal Republic of Germany, it was therefore not only the old wealth of Nazi collaborators that flourished. There was also increasing prosperity for large sections of the dependent workforce. However, this was only a temporary concession.

Eastern enlargement: dependent oligarch capitalism under NATO

From 1990 onwards, US advisors organized the de-industrialization of the ex-socialist states. McKinsey, Price Waterhouse Coopers and JP Morgan dominated the German Treuhand agency: the companies of the socialist GDR were sold at knock-down prices, downsized after a few years or even shut down. With the help of EU subsidies and World Bank loans, subsidiaries and suppliers of Western corporations replaced the old industry - wages are still lower than in West Germany, unemployment is higher, even if it is mitigated by internal labor migration.

This is how the type of dependent oligarch capitalism was established in the ex-socialist states of Eastern Europe: Foreign corporations - primarily in the automotive, energy, logistics, trade and pharmaceutical industries - selectively use the locations for supplier companies or branches.

Governments waive taxes and finance infrastructure. The EU grants subsidies without imposing conditions on workers' rights. Wages are low and trade unions are deliberately weakened. Western banks, consultants and supermarkets are entrenched. Strategic decisions are made abroad. At the same time, local oligarchs form private-state monopolies. Up to a quarter of the working population have emigrated or are employed as cheap migrant workers in the rich West, seasonally or permanently, in construction, in private households, in home care, in hospitals and old people's homes, in logistics and prostitution.

All Eastern European states first became members of NATO, only then were they allowed to join the EU - there was no exception. The USA set up additional US military bases in particularly anti-Russian states such as Poland and the Baltic states.

Politically, this is carried out - as with the Marshall Plan and NATO - by right-wing governments of various stripes, be they conservative, liberal or even social democratic. In Yugoslavia, NATO and the EU promoted nationalist, racist and right-wing radical to fascist forces and thus the nationalist division into six small states - although nationalism is denounced by the same ruling forces in the West (Rügemer, 2022b).

The USA also prioritized the military in the eastward expansion - for the further march towards Russia. All Eastern European states first became members of NATO, only then were they

allowed to join the EU - there was no exception. The USA set up additional US military bases in particularly anti-Russian states such as Poland and the Baltic states. The USA also ensured the separation of the Kosovo region from Serbia, leaving it impoverished, but now operates the largest US military base in Eastern Europe here. Other poor Eastern European states are already members of NATO, such as North Macedonia, Montenegro and Albania, without any prospect of becoming EU members in the foreseeable future. They are and will remain economically impoverished, important only as military bases against Russia.

Only Russia resisted the US-led de-industrialization

Initially, this strategy also worked against the most important US target state, Russia: the first pro-Western, corrupt president after 1990, Boris Yeltsin, promoted the sell-off of companies with the help of Western investors and consultants and Western-sponsored, local oligarchs. The national economy shrank, the population became impoverished, suicides and alcohol consumption increased.

Putin became the leading figure of resistance: although capitalism was not abolished, it was and has been shaped according to national interests since the beginning of the new millennium. Some oligarchs have joined in, some have moved their headquarters to London or Israel. The Russian economy recovered, NATO stayed outside: Russia became a secessionist enemy of the western system - although the earlier justification of evil "communism" is completely unfounded.

Conclusion: since the Marshall Plan and the founding of NATO, the USA has by no means



“The new, deregulated US capital players, which are still officially considered “shadow banks”, are buying existing companies in Europe” (Cartoon: Liu Rui/Global Times, 2024).

wanted to spread the “free market economy” and capitalism, but only a selective location policy for Western investors, not economic development. Moreover, this is doubly secured militarily, through NATO membership and additional US military bases - and politically it is carried out with the help of right-wing political forces.

Western Europe: Dependent parliamentary capitalism

Since the First World War, and significantly expanded since the Second World War, US corporations, banks and consultants have operated branches in Western Europe, such as Coca Cola, Ford, Good-year, General Electric, IBM, Dow, Esso, Procter & Gamble, UPS, McDonald’s, JP Morgan, McKinsey. The new US digital and platform companies such

as Apple, Microsoft, Google, Amazon, Facebook and Uber and US consulting firms such as Accenture and Freshfields now also operate branches in European countries with leading positions in their sectors.

But since the turn of the millennium, a new practice has emerged: the new, deregulated US capital players, which are still officially considered “shadow banks”, are buying existing companies in Europe. Private equity investors such as Blackstone and Katch Investment Group (KKR) (“locusts”) specialize in medium-sized, unlisted companies. “Europe is the best market in the world for us,” said Stephen Schwarzman, head of the largest private equity investor Blackstone, after the annual Super Return International, the meeting of 5,000 private equity managers in Berlin in 2024 (Handelsblatt, 2024b).

And the first US capitalist league with BlackRock & Co. made their entry into the EU with the help of the “financial crisis” of 2008. BlackRock, Vanguard, State Street, Capital Group, Fidelity & Co. are now the leading owners of the most important companies and banks in Germany, France, Belgium, Luxembourg, the UK, the Netherlands and, incidentally, Switzerland. For example, they are represented in all 40 stock corporations in the leading German share index DAX, in varying compositions (Rügemer, 2019).

The strategic decisions - restructuring, sale of parts of the company, job cuts, relocations abroad - are mainly made in the USA, in consultation with the European Commission. Most of the profits go to the USA, while the Americanization of working conditions (job patterns, gig working, working poor) is causing real wages to fall throughout the EU (HBF, 2024).

As a result, the EU’s share of global GDP has fallen from its former peak of around 25% to 15%, while the USA’s share has since risen back to its former level of 25%. This is why the head of Italy’s largest company, ENI (oil and energy), Emma Marcegaglia, warned ahead of the G7 meeting in 2024: “If we carry on like this, we will not be able to maintain our welfare state, we will fail in the face of technological leaps and we will lose our quality of life” (FAZ, 2024b).

This is politically promoted and implemented in traditional parliamentary democracies: but they are subject to NATO, the EU and corporate decisions subject to BlackRock & Co. Governments and the European Commission are advised by US firms such as McKinsey, Accenture, KPMG, PwC, EY, Freshfields, White & Case, Standard & Poor’s and Morgan Stanley. Example for Germany: In addition to this highly remunerated consultancy, at least 179 ex-employees of these firms were emp-

loyed as highly paid staff in the German Federal Chancellery, federal ministries and federal authorities in 2022 (DS, 2022). In the German Ministry of Economic Affairs under the Green Minister Robert Habeck, a BlackRock manager from London was appointed head of the policy department. PwC was installed in this ministry as the official auditing authority: US consultants decide on government subsidies to companies in energy design (PwC, 2023). Thus, European governments are acting ever more authoritatively in the interests of US capital.

This is why the parties in power for decades since the end of the Second World War - whether labeled as conservative, Christian, liberal, social democratic - have, accelerated since the turn of the millennium, impoverished the majorities of dependent employees, have continued to lose voter support, have promoted the strengthening of new right-wing forces: This applies to all leading capitalist states, the USA first and foremost, to the UK, France, Germany, Italy, the Benelux and Scandinavian states, and incidentally also to closely allied Israel.

“America First” energy policy since President Obama

The US government under President Barack Obama was advised by BlackRock during the financial crisis and promoted the international expansion of shadow banks. At the same time, Obama promoted and subsidized US fracked gas and turned it into a geopolitical weapon, especially against Russia. It is extremely harmful to the environment and is also deadly for local residents: they die earlier, as a long-term study by Harvard University found (Li, 2022). Nevertheless, the USA became the world’s largest exporter. Under Obama, this fracking gas was also

given a green makeover: he had the gas, which had been discredited as environmentally harmful, renamed “natural” gas, liquefied natural gas (LNG). In this way, green parties and green investment funds are also taking part in military-backed geopolitics (Rügemer, 2022).

It was not until the war in Ukraine that the US fully achieved its goals: 1. cut the EU off from Russian gas and make it dependent on the much more expensive LNG, 2. additionally commit the EU states to even higher war budgets, against Russia and China.

The EU under Commission President Jean-Claude Juncker agreed the long-term purchase of LNG with the US government already under Donald Trump back in 2018. However, it was not until the war in Ukraine that the US fully achieved its goals: 1. cut the EU off from Russian gas and make it dependent on the much more expensive LNG, 2. additionally commit the EU states to even higher war budgets, against Russia and China. With the European Defense Industry Programme (EDIP), the European Union is subsidizing at least 50 percent of the weapons procured for its own military to be “Made in Europe” by 2030.

The European Commission as capital bureaucracy also accepted the two US laws of 2022 on the re-industrialization of the USA without criticism: The Inflation Reduction Act (IRA) as well as the CHIPS and Science Act. The USA is thus also subsidizing relocations from the EU, i.e. the de-industrialization of EU member states.

Germany: de-industrialization - and re-industrialization

Energy-intensive chemical companies are closing departments in Germany. Bayer is relocating mainly to the USA. BASF is spending 10 billion euros to expand its existing large site in China - where the chemical companies Covestro and Wacker are also expanding their production. The most successful German heating manufacturer, Viessmann, was bought by its US competitor Carrier. The leading confectionery manufacturer Haribo is relocating a large part of its production to the USA. Medium-sized companies are being bought by US “locusts” or are closing down. The number of insolvencies of small SMEs has risen steadily in recent years (Tagesschau, 2024). The bank JP Morgan, which has an expanded branch in Germany, has doubled its clients in the German SME sector since 2022 and arranges outsourcing to the USA (Handelsblatt, 2024). US consultants dominate the arrangement of acquisitions and restructurings (Rügemer, 2023a).

The two German industrial sectors that have long been international leaders are shrinking: German car manufacturers are still surviving by producing and selling luxury cars, in the USA and especially in China; automotive suppliers are being outsourced to the USA, Hungary, Slovakia or China, or they are closing down if they cannot keep up with e-mobility. And mechanical and plant engineering is increasingly lagging behind technologically, even compared to China (PwC, 2024).

But the re-industrialization of Germany is also under US control. Apple, Google, Microsoft & Co. are increasingly taking over the digitalization of companies, finance, trade, media, education, healthcare, infrastructure and public authorities. Google is leading the way with transatlantic submarine cables.



Germany-based multinational chemical company BASF's new plant in South China
(Photo: Global Times, 2024).

Apple and Microsoft are building new data centers in Germany (FAZ, 2024a). The pharmaceutical company Eli Lilly is building a new factory in the Rhineland-Palatinate region, which is dotted with US military bases. Intel is building the largest chip factory in Europe in structurally weak eastern Germany - 10 billion euros in subsidies have been agreed: The subsidies come from all state and supra-national budgets, from the EU in Brussels, from the German government in Berlin, from the regional state government of Saxony-Anhalt and from the city of Magdeburg. At the same time, Intel is also constructing subsidized new chip factories in Poland and Israel (Rügemer, 2024: 19).

The largest chip manufacturer in the world, TSMC from Taiwan, is also building a subsidized chip factory in previously de-industrialized, poor East Germany. Tesla has built by far the largest, highly subsidized factory for e-cars in Germany and wants to expand

further, also in eastern Germany (NYT, 2023). The US chip manufacturer Wolfspeed is building a chip factory in Saarland, a traditional industrial region whose steelworks have long since closed.

At the same time, Germany's basic industrial structures remain at the level of poor developing countries: The state-owned railroad company Deutsche Bahn has too few rails, signal boxes and electrical overhead lines are in extreme need of repair - train cancellations and delays are part of the daily experience of millions of customers. 10,000 bridges, most of which date back to the post-war period, are in need of renovation, but only a few dozen are being painstakingly renovated in procedures that take years (Tagesschau, 2024). Despite decades of searching, no final storage site has been found for nuclear waste; the 16 interim storage facilities, some of which are in dilapidated former mines, are partly unauthorized (Energiezukunft, 2020).



“Shadow banks, BlackRock & Co., and new monopolies must be truly regulated, unbundled, nationalized, and transferred to common ownership” (Photo: China Daily, 2021).

BlackRock as coordinator for the “reconstruction” of Ukraine

BlackRock&Co. are among the leading shareholders in these US companies, as well as in TSMC and the 40 German DAX companies. Re-industrialization under US dominance also includes armaments. For example, the largest armaments company in Germany, Rheinmetall, which has expanded particularly strongly in recent years, is now under US control after 150 years of German tradition: the largest shareholder is now BlackRock, followed by Bank of America and Goldman Sachs.

Whether de-industrialized or re-industrialized, before the war, during the war and even after the war: US shareholders are reaping the high profits. BlackRock is also coordinating the reconstruction of Ukraine: according to CEO Lawrence Fink, it is to be digitized and de-bureaucratized to become a “be-

acon for the power of capitalism” (Wirtschaftswoc-
he, 2023). The more that is destroyed beforehand for
the benefit of BlackRock shareholders - BlackRock
is one of the leading shareholders in the US arms,
energy, digital and fracking industries - the more
lucrative the re-industrialization of Ukraine will be.

And the war budgets of the European NATO
states are impoverishing the dependent workforce
even more: working conditions are being made even
more flexible, cheaper and disenfranchised - older
workers are being eliminated prematurely; more
and more overtime is not being paid. Young, wil-
ling skilled workers are no longer being brought in
primarily from poor Eastern Europe, but from even
poorer third countries such as India, Argentina and
Morocco. Food, energy, rents, mobility, medical treat-
ment and retirement homes are becoming more
expensive, pensions are being lowered and priva-
tized, and life expectancy is falling (DPWV, 2024).

This is also affecting the middle class, which has been pampered for decades as systemically relevant, in the USA for three decades, in the rich EU states with a delay of a few years.

At the same time, the new upstarts in the wake of the deregulated shadow banks, together with their civilian private army of advisors, their political accomplices and their “new values” of egoistic ego-staging, are acquiring new, elitist wealth. BlackRock & Co. anonymize their super-rich financiers with the help of letterbox companies in a dozen financial havens between the Cayman Islands, Luxembourg and Amsterdam, thus impoverishing the Western states, which are becoming increasingly over-indebted, including through more and more shadow budgets, with no prospect of regular repayment - the USA first and foremost: the leading capitalists demand and receive unprecedentedly high state subsidies, and at the same time industry and income for the majority of the population are shrinking, public infrastructure is being dismantled and made more expensive.

How Europe must save itself

The logic illustrated by Germany is proliferating in a weakened and different form throughout the EU. At the same time, previous shifts are continuing: Western European automotive suppliers are investing even more than before in Poland and Hungary. Open contradictions are emerging, both economically and politically: German car manufacturers VW, BMW and Daimler are rejecting the EU’s planned punitive tariffs on Chinese imports (FAZ, 2024). Spain, France and Belgium are importing gas from Russia. China is building a battery factory in Hungary. Serbia decided on a community of destiny and a free trade agreement with China in 2024 and is cooperating even more with Chinese inves-

tors, and China is building the rail link between the capitals of Budapest and Belgrade. Spain, Ireland and Norway recognize Palestine as a separate state. Hungary under Prime Minister Viktor Orban is negotiating with Ukraine, Russia and China about the possibility of a ceasefire in Ukraine against the EU’s leadership (Al Jazeera, 2024).

US and EU sanctions are being circumvented with increasing ingenuity. India has become the largest intermediary for sanctioned Russian energy. Russia’s economy is flourishing, in contrast to Germany in particular. After two years of Western sanctions, Russia overtook the USA as a gas supplier in Europe in mid-2024 (Financial Times, 2024). A revealing detail: In the factory abandoned by Daimler, skilled workers are now building Chinese cars, which are also technically better and also cheaper (Focus online, 2024).

With the recipe of the ex-banker and populist autocrat Macron, who has rightly plummeted in the polls, and his somewhat more moderate colleagues in other European governments, Europe would indeed die: Even more support for Ukraine’s hopeless proxy war against Russia, even more armament against China, even more adherence to Blackrock concepts such as the pension “reform” pushed through by Macron in an authoritarian manner and also against parliament - the young people in particular, who have recently been intensively courted by Macron and the other crashing governing parties, have nothing to expect from such policies.

Freedom, equality, brotherhood and sisterhood require something else. The shadow banks, BlackRock & Co. and their new monopolies must actually be regulated, unbundled, expropriated and transferred to common ownership. But so far, these are only isolated voices (Rügemer, 2023). But even the US-oriented European Council on Fore-

ign Relations (ECFR) stated, after a year of war in Ukraine: “Europe as a US vassal - that is unwise for both sides”, and, according to ECFR: only the PR China wants to and can “reshape the international order, economically, diplomatically, militarily, technologically”; China is also “at the heart of many critical supply chains on which the US and its allies depend” (Policy Brief, 2023).

Whereby “China” does not only mean the state of China, but also the continental formats SCO (Asia), CELAC (Latin America), FOCAC (Africa), 14+1 (Eastern Europe) and above all BRICS: Brazil, Russia, India, China, South Africa with other states such as the UAE, Egypt, Iran - and all without Chinese military bases - in systemic logical contrast to the militarily accompanied, war-obsessed globalization according to the US model.

Even the Research Institute of German Entrepreneurs states that it was and is national sovereignty that has enabled China’s rise to become the most successful economy (IW-Report, 2024: 6). So: Germany, France, European Union - let’s go for sovereignty! 🌸

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BERTOLT BRECHT*



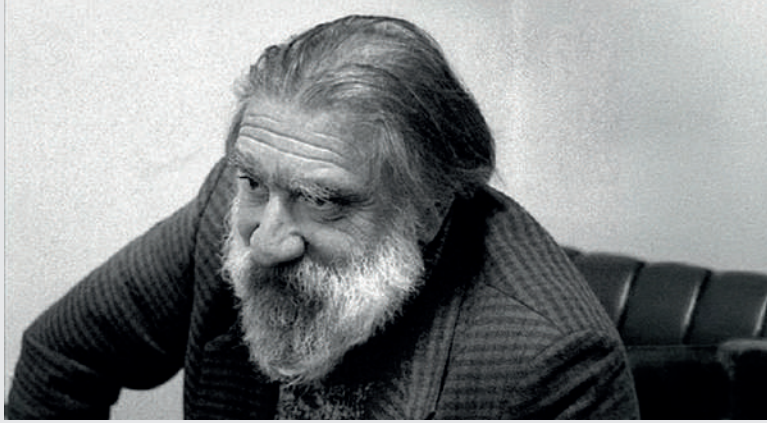
**Bertolt Brecht was one of the most influential playwrights of the 20th century. His works include *The Threepenny Opera* (1928) with composer Kurt Weill, *Mother Courage and Her Children* (1941), *The Good Person of Szechwan* (1943), and *The Resistible Rise of Arturo Ui* (1958). Brecht was born in Augsburg, Bavaria, in 1898, and the two world wars directly affected his life and works. He wrote poetry when he was a student but studied medicine at the Ludwig Maximilian University of Munich. After military service during World War I, he abandoned his medical studies to pursue writing and theater. A member of the Independent Social Democratic Party, Brecht wrote theater criticism for a socialist newspaper from 1919 to 1921. His plays were banned in Germany in the 1930s, and in 1933, he went into exile. He relocated to East Berlin in 1949 and ran the Berliner Ensemble, a theater company. Brecht's poetry is collected in *Poems 1913-1956* (1997) and *Poetry and Prose: Bertolt Brecht* (2003). He wrote a wide variety of poetry, including occasional poems, poems he set to music and performed, songs and poems for his plays, personal poems recording anecdotes and thoughts, and political poems. Bertolt Brecht died in 1956. He is buried in Berlin.*

In Praise of Learning**

Learn the simplest things!
For you whose time has come
it is never too late!
Learn your ABC,
it is not enough, but learn it!
Do not let it discourage you, begin!
You must know everything!
You must take over the leadership!
Learn, man in the asylum!
Learn, man in prison!
Learn, wife in the kitchen!
Learn, man of sixty!
Seek out the school, you who are
homeless!
Sharpen your wits, you who shiver!
Hungry man, reach for the book:
It is a weapon.
You must take over the leadership!
Don't be afraid of asking, brother!
Don't be won over,
See for yourself!
What you don't know yourself, you
don't know.
Add up the reckoning.
It's you who must pay it.
Put your finger on each item
ask how did it get here?
You must take over the leadership!



CAN YÜCEL*



**He was born in Istanbul on August 21, 1926. He is the progeny of the renowned Minister of National Education, Hasan Ali Yücel. He pursued his studies in Classical Philology in the Faculty of Language and History-Geography at Ankara University and at the University of Cambridge in England. He was employed at BBC Radio in London for a period of time. He enhanced the comprehension of social poetry with his distinctive features of lyricism and comedy. Through his singular and individual approach to words, he cultivated a remarkable and authoritative voice. In "The Poems of a Politician," the voice is simultaneously paternal, affectionate, sardonic, and poignant. Possessing extensive understanding of language and culture, he adeptly utilized several sources, including folklore, divan poetry, current poetry, and colloquial language. On March 12, 1971, he received a 15-year prison term for translating publications by Che Guevara and Mao. He was liberated in 1974 according to a general amnesty. Upon attaining his freedom, he published the book entitled "A Politician's Poems," which he had composed while incarcerated. Subsequent to September 12, 1980, his work entitled Rengahenk was seized on the basis of obscenity. By crafting his distinctive poetry, Can Yücel emerged as a prominent figure in contemporary Turkish poetry. He enhanced the literature of the period with his innovative and accomplished poem translations. He translated works by notable authors including Lorca, Brecht, Wilde, and Shakespeare. The esteemed poet, who died on August 12, 1999, was interred in Datça, his place of residence.*

The Wall of Love**

Was it you or your loneliness
In the blind dark we opened bleary eyes
Last night's curses on our lips
We would frequent art-lesbian-lovers,
Galleries and public places
My daily care was to remove you into the midst of men
An ammoniac flower in your button hole
My loneliness my incontinent countess
The lower we sink the beter
We loitered in the pubs at Kumkapğ
With beanstew, beer and wine before us
And police battalions behind us; in the mornings
My Guardian Saints would find my carcass in the gutters
Hot as the garbage-collecfors' hands,
With their hands I caressed you.
My loneliness my bristle-haired beauty,
The higher we stink the beter

I looked in the sky a red flash a plane
Steel and stars and human beings galore
One night we leapt the Wall of love
Where I fell was so clear so open
You and the universe at my side.
Uncountable my deaths, their resurrections.
O loneliness my many songs
The more we can live without lies the better.



The Substance of U.S.-China Competition in Light of the U.S. Constructed Economic Trap

Wang, H. (2018). *China-U.S. Gap and Its Destiny: Breaking the Trap for the Second Largest Economy*. Beijing: Huaxia Publishing.



YI SHAOXUAN*

SINCE THE 1980S, WITH THE IMPLEMENTATION of the policy of “Reform and opening up”, China’s development has attracted the attention of the whole world. It had become the world’s largest developing country, with the possibility of overtaking the United States in economic terms. For some time now, a number of hypotheses have been put forward about the relationship between the dominant power and the developing countries. For example, American political scientist Graham Allison put forward the *Thucydides Trap Theory* (Allison, 2017) and American political theorist Joseph S. Nye, Jr presented the “Kindleberger Trap Theory” (Nye, Jr, 2017).

Any theory is a theoretical essence abstracted

from the proposer’s observation of social phenomena. It is influenced by the political, economic, and cultural conditions of the society in which the proposer lives. Therefore, when studying the issue of Sino-American competition, the observation and summary of Chinese scholars on Chinese society should be equally emphasized. Among them, Prof. Wang Hongguang advanced the theory of *Trap For the Second Largest Economy*, which is unique in perspective, clear in logic, rigorous in argumentation and supported by a large amount of data. It enables us to see the root of the trade friction between the United States and China, as well as the nature of the Sino-US science and technology war. This book



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China-U.S. Gap and Its Destiny: Breaking the Trap For the Second Largest Economy establishes a systematic and comprehensive exposition of this theory. In addition, the author Prof. Wang Hongguang is one of China's top biomedical talents and a special expert of the National Committee of the Chinese People's Political Consultative Conference (CPPCC) for participation in politics. His suggestions and recommendations in the field of science and technology have been adopted by the government many times. Given the author's special status, his thoughts and conclusions represent the judgment of the Chinese government's think tank and are highly consistent with China's strategic direction.

What's the Trap for the Second Largest Economy?

Since the US became the first economic power in 1890, the second economic power changes almost every 16 years. Britain, Germany, France, the Soviet Union, Japan and other former second largest economies have all lost the second place and fallen towards economic decline. Based on this pattern, the author defines "the Trap for the Second Largest Economy" as the pattern in which the second economic power, after a certain period of development, loses its status due to economic recession for a variety of reasons.

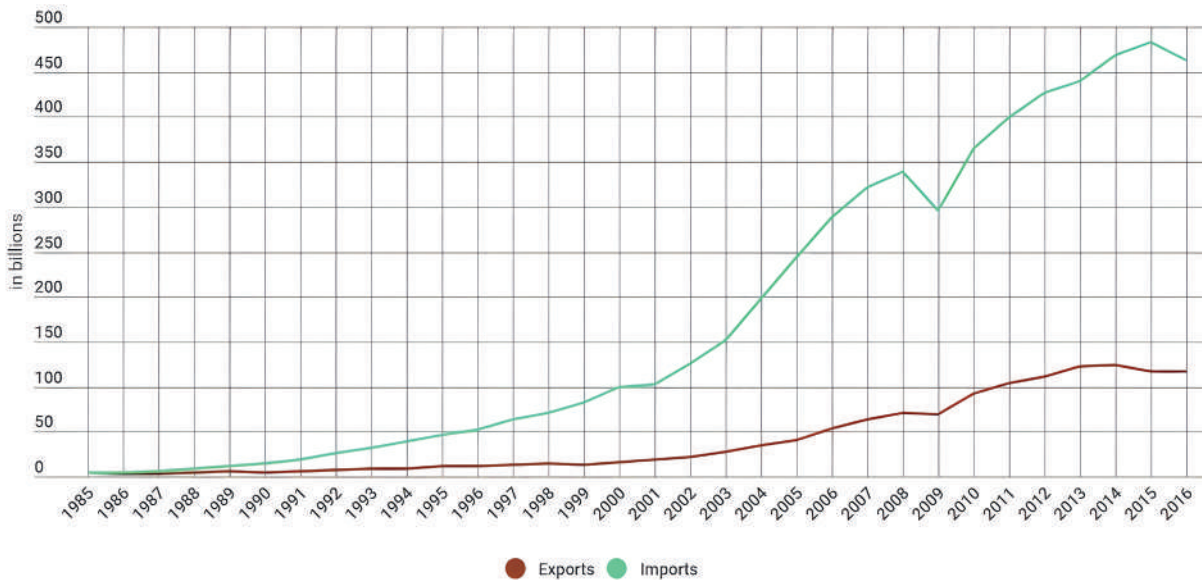
According to the book, the reasons for the successive decline of "the second largest economy" can be broadly categorized into three types. First, the second power's own decision-making errors. Second, the largest power's successful containment. Third, external factors. If the biggest power and the second power are regarded as the trap setter and the trap defender

respectively, then the trap setter will continue to promote power strategy, gunboat strategy, geo-politic strategy. It has also developed six means to maintain the hegemonic position. They are: to promote the idea "human rights over sovereignty", take hold of monetary system, make use of international rules, impose trade wars, launch warfare, and seize technological talent. If the trap defender lacks awareness, or rushes into ill decision, it would be caught in the snare. For instance, Germany waged World War two times and ended up becoming consumed by it. The Soviet Union's ideology collapsed and lost without a fight. Japan lacked strategic vision and willingly became the political, military and diplomatic attachment of United States. Besides that, the European Union is institutionally, financially and culturally aligned with the US instead of standing alone.

How did China become the second largest economy?

Over the past 40 years, China has created an economic miracle. Zhu Tian pointed out that it is normal for China's economic growth rate to be higher than that of developed countries. Since it is convenient for China to borrow and learn many economic policies directly rather than spare time to research and develop them thoroughly once again. The true mystery of China's economic growth is the fact that China's economic growth rate is much higher than that of other developing countries (Zhu, 2017). Giovanni Arrighi stated that China will replace the United States as the world's hegemony and lead the world on a different, hybrid, non-capitalist, market-based development path (Arrighi, 2007).

Figure 1. US Imports and Exports with China (1985-2016)



Since the 1980s, the rate of US imports from China has been on an upward trend (Graph: CGTN, 2017).

Whether China will replace the United States is still up in the air, but its economic development is following a different path to that of the West, with the emergence of many distinctive denationalization practices.

Generations of economists have been looking for the secret of China’s economic take-off. For instance, Liu Deqiang, who presents that the family planning policy, the public ownership of land, the Hukou (household registration) system, the presence of Hong Kong, Macao, Taiwan districts, overseas Chinese, and the huge size of the population are the exclusive recipes for China’s development (Liu, 2022). Song Ligang and Zhou Yixiao, who argue that the dividends of reform, savings, and globalization have played a determining role in China’s economic development.(Song, L.G.& Zhou, Y.X.) Giovanni Arrighi, who argues that the roots of China’s rise lie in

the Cold War period social and political reconstruction under the communist system, also in the achievements of the Chinese empire in terms of state-building and national economic construction before its subordination to the Euro-centric interstate system (Arrighi, 2022).

Chinese economists have expressed different explanatory perspectives. Steven N.S. Cheung brought about the “County-level Government Competition Perspective”. Due to the fact that county governments are in charge of land use rights and are in fierce competition in attracting resources, it is conducive to reducing corruption and expanding the benefits of economic development (Cheung, 2009). Lu Feng presented the “Great Power Infrastructure Perspective”, which indicates that a power network that organizes Chinese society politically, economically, militarily and ideologically drives China’s sustained

economic growth. Such network also determines China's need to maintain its economic independence and launch industrialization (Lu, 2022). Zhu Tian proposed the "Confucianism Thoughts Perspective" (Zhu, 2015). Max Weber famously asserted that the Protestant ethic led to the rise of capitalism in Western Europe.

First, China's economic development has entered an era of "multiple overlapping stages," including the mid-to-late stage of industrialization, the middle stage of information technology, the early-mid stage of urbanization, the accelerated stage of rural revitalization, and the early stage of the new scientific and technological revolution.

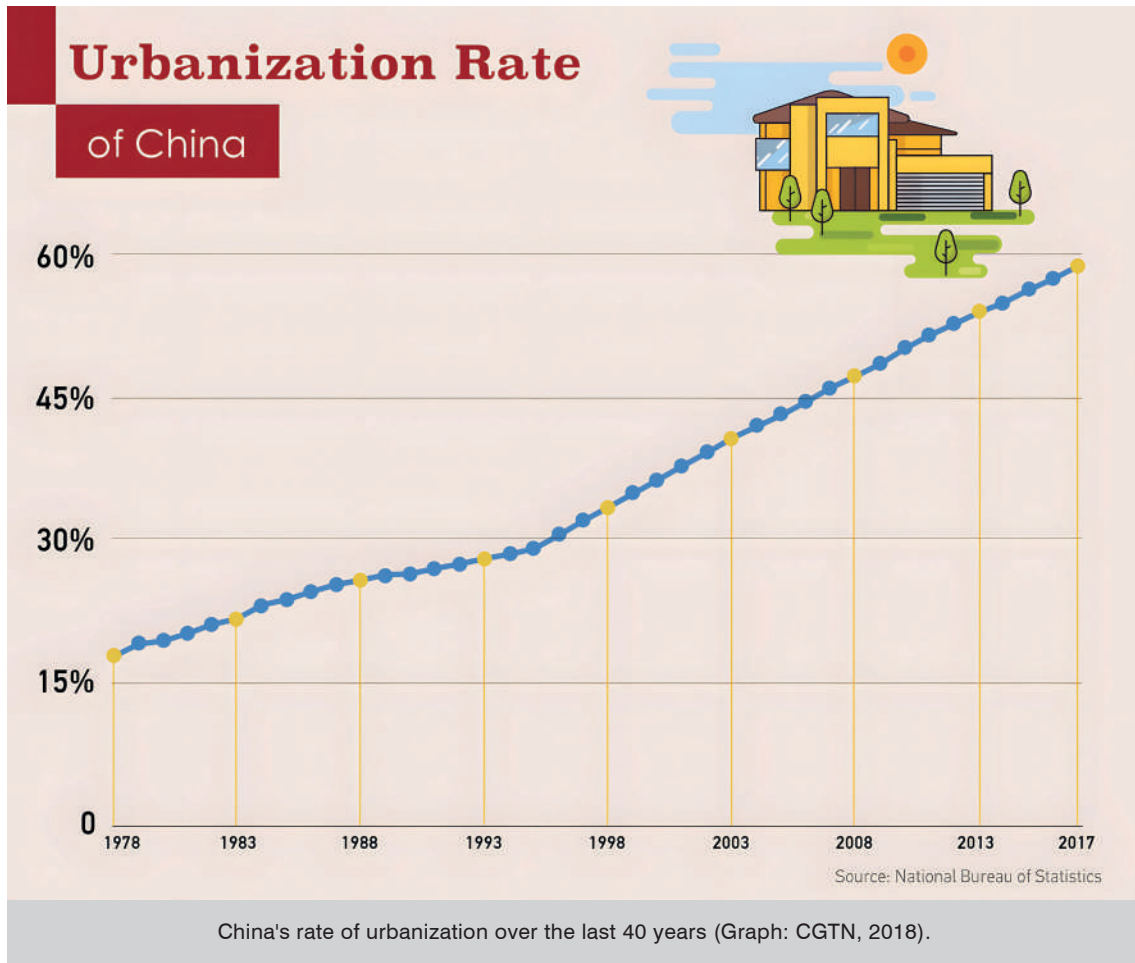
In the same sense, the Confucian culture, which emphasizing education and the virtue of thrift and frugality ensured the accumulation of both physical and human capital, as evidenced in many East Asian countries/regions that emerged economically in the post-war period. In addition, in the process of economic reform, there was also some pragmatic political wisdom such as "treating special issues specially" (Bai, Xie, Song, & Wang, 2022), "Treat the old man with old way, and treat the new man with new way" (Lin, 2022). These practices have led to a stable transition to economic reform and avoided potential chaos. In his follow-up work, *Gap Economics*, published in 2020, Professor Wang summarises China's economic code as "two hands, two feet." That is, fight with two hands of government and

market mechanisms while walking with two feet of balanced and differentiated development (Wang, 2020).

This book analyses this issue in more detail. First, China's economic development has entered an era of "multiple overlapping stages," including the mid-to-late stage of industrialization, the middle stage of information technology, the early-mid stage of urbanization, the accelerated stage of rural revitalization, and the early stage of the new scientific and technological revolution. This is seizing an entirely new historical opportunity. Secondly, unlike Japan, which is not independent in terms of sovereignty and diplomacy, and has no economic autonomy, China has six unique advantages. The systemic advantage of socialism, which concentrates on doing great things; the institutional advantage of the combination of the market's "invisible hand" and the government's "visible hand"; the purchasing power of nearly 1.4 billion people; the most complete industrial system in the world; a high-quality labor force of more than 100 million college and university graduates; foreign exchange reserves of 3 trillion U.S. dollars. At the same time, China also possesses the valuable experience of reform and opening up. Over the past 40 years, China's GDP has realized a more than 200-fold growth and has shown a momentum of continuous growth.

In other words, compared with Germany, Japan, the European Union and other former second economic powers, China's rising path and developing measure is totally different, hence it stands a great chance to jump out of the trap for the second largest economy. What's more, in all probability it could prevent the United States from repeating the tried-and-true "old tricks" that it has used for a century to contain those who came after it.

Figure 2. The course of urbanization in China



What is the current status of China-United States power and how big is the gap?

The current gap between China and the United States is very similar to that of Japan and the United States in the 1980s. For example, both China and Japan's economic growth rate was soaring, keep around 9.8% for many years in a row, and the total economic volume is expected to exceed that of the United States; both started to suffer from America's obvious curtailment when their GDP reached about 70% that of the US (Japan's GDP equaled 71% of U.S. GDP in 1995 and China's GDP equaled 66% of U.S.

GDP in 2018); became the US's largest trading partner as well as creditor. Through political assimilation and intervention, military occupation and protection, diplomatic alliance and subordination, economic support and then containment, cultural penetration and assimilation, scientific and technological support, and then blockade, the US forced Japan to adopt the US system, play by US rules, conform to US culture, and accept the US military presence. It successfully and effectively curbed Japan's economic growth and secured its position as the number one economic power (Wang, 2020).

Today, China is facing the same situation as Japan

did back then. If the United States' strategy towards Japan is to "acknowledge the system and curb the economy", then towards China it is to "deny the system and curb development". In order to contain the rise of China, the United States has taken a series of escalating containment measures. They are: system war, institutional war, trade war, science and technology war, currency war, war on talent, cyber war, food war, oil war, biological warfare, space war, military warfare. Above are 12 kinds of unconventional warfare to contain China, and the US has used more than half of them. Among them, trade war is the prelude, national power war is the goal, science and technology war is the essence, talent war is the core (Wang, 2020).

The US-China rivalry will cause a global earthquake. Based on the distribution of the world's total economic volume before the U.S.-China trade war in 2018, China, Japan, and Germany account for a quarter of the world's total economic volume, while the U.S. accounts for another quarter. In other words, with such a large volume, the trade friction between the two sides will essentially cause shocks to the trade and economic activities of the whole world.

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Currently, the discussion on this issue can be divided into three perspectives. The first predicts that China will eventually overtake the US in a good or bad way, i.e., the "China threat/rise theory" school, such as *The Tragedy of Great Power Politics and Global Game Change: How the Global Southern Belt Will Reshape Our World* (Mearsheimer, 2014; Naisbitt, J. & Naisbitt, D.); the second is pessimistic about China, namely the "China collapse theory" school, represented by *The Coming Collapse of China* (Chang, 2001). The book systematically compares the two nations in terms of comprehensive national strength, economy, science and technology, education and other aspects with 40 indicators. Among which, 70% of the indicators of the United States are leading and 30% of the indicators of China are leading. However, China's leading indicators are quantitative indicators, while the U.S. leading indicators are quality indicators. Furthermore, American indicators in education own an overall advantage. This is the biggest miss-distance for China to catch up with, and also the hardest.

What are the possible outcomes of the Sino-American competition, and what's the possible future direction of international relations?

The international discussion regarding the final result of the Sino-US competition can also be roughly categorized into three kinds. It is either a lose-lose game, America's victory or China's victory. The standpoint this book holds are summarized as follows: First, the US will not tolerate transcendence and China will not give up development.

The trade war will be a protracted war. The “Trap for the Second Largest Economy” can only be filled through the comprehensive national power struggle. Second, the United States development needs China’s market, while China’s development needs American technology. Cooperation results in win-win situation, while decoupling isn’t in the interest of either country. Third, the trade war is unfavorable to China in the near future, unfavorable to the United States in the long term, and always unfavorable to the world (Wang, 2020).

However, in the face of the challenge of China’s continuous rise, the attitude of the United States is also quite clear. First, it will not give up or relax its containment of China after the signing of any trade agreement. Second, no matter what the outcome of the election is, its next administration will not give

up or relax its containment of China, due to the fact that containing China’s development has become a bipartisan consensus. Third, the United States will not allow China to overtake it, especially when China has a completely different ideology and path of development from its own (Wang, 2020).

In fact, both sides should recognize: China’s economic overtaking of the United States will not be a threat. China could surpass the United States in terms of economic output, but it will hardly surpass the United States in terms of per capita GDP (Wang H.G.& Zhang J. X.). China will remain the largest developing country, and it will not export its ideology or threaten U.S. liberal democratic values. On the contrary, excessive resistance to the inevitable trend of China’s rise will instead accelerate the decline of the U.S. economy. Sociologist Arrighi judges that “if



With the economic traps set by the US, the trade war will be a long one (Cartoon: CGTN, 2022).

the U.S.-centered world system eventually collapses, it will be largely because of U.S. resistance to adjustment and adaptation. U.S. adjustment and adaptation to growing economic power in East Asia is a necessary condition for a non-catastrophic transition to a new world order (Arrighi, 2022)”.

The U.S. succeeds in containment by subverting the existing trade pattern or trade system so that China’s exports are blocked, subverting the current financial system so that China’s currency is devalued, and imposing a high degree of technological embargo on China to curb the upgrading of the latter’s industries.

In recent years, the world economic, scientific and technological landscape has undergone major changes as a result of the epidemic. The pause button of globalization is pressed, the economic depression has become a foregone conclusion. “Neoliberalism is dead”, it is already a major trend for the government and the market to use two “hands” together. Loose policy give birth to the risk of financial crisis, the world economic war seems inevitable (Wang, 2020b).

Under the influence of these factors, there are three possible endings to the US-China competition. The first scenario is to maintain the status quo, with China gradually rising, and China’s GDP will overtake that of the US around 2030. The second scenario is that the U.S. grows fast and China grows slow. The U.S. succeeds in containment by subverting the existing trade pattern or trade system so that China’s exports are blocked, subverting the current financial system so that China’s currency is devalued, and

imposing a high degree of technological embargo on China to curb the upgrading of the latter’s industries. In this scene, China’s pace of catching up with the U.S. is prolonged after 2030, or even until around 2040. The third scenario is a failure of containment, with the rise of China and the decline of the United States, ushering in a century of dramatic changes in the world landscape. This would trigger a world economic crisis, destabilize the U.S. monetary system (Wang, 2020b).

This book was written in 2018, and despite the fact that almost six years have passed since then, the judgments on various events are still very accurate. Some of the prophecies are being fulfilled one by one. The downside is that some of the short-term judgments do not take into account of unexpected factors such as the deterioration of the global economic situation caused by the epidemic. For example, in Chapter 7, the author mentions that “China is expected to cross the ‘middle-income trap’ in about five years”. Nevertheless, even at the slowest rate calculated in the book (i.e., 2026), there is still a risk that this goal will not be accomplished according to the current progress. According to the “Statistical Bulletin of the People’s Republic of China on National Economic and Social Development in 2023”, the annual GNI in 2023 was 1,251,297,000,000 yuan, with a national population of 1,409,670,000 at the end of the year, China owns a per capita GNI of about 88,744 yuan/\$12,300 (NBS, 2023). According to the latest data, the World Bank’s threshold for high-income countries in 2024 is \$14,005 (World Bank, 2024), there’s still a difference of about \$2,000. In fact, since the middle-income country range is \$1,145-\$14,005, an economy that has just entered the ranks of the middle-income countries must increase more than 10 times before it can reach the high-income level. Therefore, it is indeed a difficult process to climb from a middle-income to a high-income country.

However, if there are no other unforeseen events, China's crossing of the "middle-income threshold" and entering the ranks of high-income countries is still a high probability event, even if it happens a little later than predicted in the book.

In addition, after the publication of this book in 2015, Prof. Wang Hongguang and his team have published a series of books centered on China's national strategy, and these new works have further elucidated and clarified the issues raised previously. Apart from that, the team have continuously supplemented the "Trap for the Second Largest Economy" theory with latest data and progress. For example, China's Food Security: Strategies and Countermeasures, published in 2020, revisits a comparison of 40 indicators of comprehensive national power between the United States and China, with the United States leading in 68 percent of the indicators and China leading in 32 percent of the indicators. This is slightly different when the book was written in 2015, but China still dominates the quantitative indicators. Another example is Gap Economics: Gaps and Trends in the Economies of China published in 2020, which summarized the solid steps taken by China to fill the trap of the second economic power up to that time. The first step is to do a good job of its own development, support private enterprises, and stabilize the private economy. The second step is to correctly manage the relationship between China and the United States, press the pause button on the tax hike and strive for a win-win situation. The third step is to take the "a Community with a Shared Future for Mankind" as the general direction of building a new model of major-country ties. China and the United States should seek common ground and interests, develop together, so as to make new contributions to the world's economic prosperity and human civilization. (Wang, 2020)

Overall, the book is a deeply laid work, and the

author's team still has several themes planned unpublished. The team have been constantly looking back at the "the Trap for the Second Largest Economy" at different points in time. It is a well-timed masterpiece. 🌸

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İZMİR KIZILÇULLU VILLAGE INSTITUTE *



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* Association of New Generation Village Institutes
(Yeni Kuşak Köy Enstitülüler Derneği)

**In Türkiye, Village Institutes (Turkish: Köy Enstitüleri) were founded in the initial years of the Republican Revolution to deliver education and training in rural areas, cultivating local individuals as educators to guide villagers in several fields, including health and agriculture. In 1937, the “Law on Village Instructors” was established to train educators for imparting literacy and mathematics in rural schools. Under the auspices of the “Law on Village Instructor Courses and Village Teacher Schools” enacted in 1939, village teacher schools were established in Eskişehir, İzmir, Kırklareli, Kastamonu, and Samsun. In 1940, the “Law on Village Institutes” consolidated existing village teacher schools into village institutes, prioritizing rural education and development. Village Institutes are distinctive educational establishments found in Turkey. During that period, the rural population constituted approximately 85%. The overwhelming majority lacked education. The Village Institutes created an educational paradigm that integrated industry and labor with art and creativity through workshops. In 1946, concurrently with Turkey’s alignment with the Atlantic bloc, the Village Institutes were disbanded. Individuals raised at the Village Institute traveled to rural areas to educate the illiterate populace. A multitude of poets, writers, and scientists have also arisen from the ranks of educators.*

TARSILA DO AMARAL*



Operários (Workers), 1933 **

* 'Operários' (Workers) has a significant place in Brazilian modern art, as it is considered to be the first painting with a social theme. It is also the largest painting Tarsila ever made and presents a pyramid of human heads all exhausted and fatigued. She created this work inspired by Sao Paulo itself, from industrial society. As she says: She did everything based on photographs and on the visual memory of certain people she knew. The racial diversity shown in this painting truly stands as a representation of the modern and racially mixed society of Brazil. Behind these workers, smokestacks and buildings represent Sao Paulo's increasingly industrialized landscape.

**1933 Oil on canvas. 150 x 205 cm.

MASSOUD SHOJAI TABATABAI*



New generation of Nazism, 2023.

* Massoud Shojai Tabatabai is an Iranian cartoonist and curator. He was born in 1964 in Tehran and has a degree in painting from the Faculty of Fine Arts at Tehran University. He held the positions of editor-in-chief of “Kayhan Caricature” magazine and director of “Iranian House of Cartoon” magazine. Throughout his career, Tabatabai has consistently participated as a juror in esteemed international cartoon competitions. He has served on jury panels in Turkey, Cuba, China, Syria, Greece, and Brazil. His skills have been requested for the organization and curation of cartoon exhibitions, including the Tehran Biennial Cartoon Competition. He has been awarded first place in events including the 8th International Animal Cartoons Competition in Serbia and the Syria Cartoon Competition.

