Peer-to-peer policy workshop on the design and implementation of STI for SDGs Roadmaps in Czechia, Serbia and Ukraine

Ukraine's activities towards the STI for SDGs Roadmap in Ukraine



Chayka Darya, d.chayka@gmail.com Prague, 8 December 2022

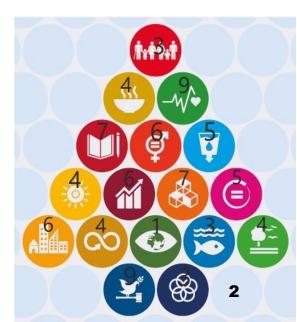
SDGs Implementation in Ukraine - Key Events:

- □ National Report "SDGs: Ukraine" (2017) strategic document with tasks and indicators on 2020, 2025,
 2030 (http://bit.ly/SDGsUkraine)
- ☐ Presidential Decree No. 722/2019 dated Sept. 30, 2019
 - ➤ to incorporate SDGs into forecast and program documents;
 - ➤ to set-up an effective system for monitoring the implementation of the SDGs;
 - NAS to take into account the SDGs when determining the directions of scientific research.
- □ Voluntary national Report on Ukraine's progress in the SDGs achievements (May 2020, UN).

National SDGs: 17 Goals, 86 tasks, 184 indicators among them STI-related 11 Goals, 28 tasks regarding the innovative technologies & ecosystem









Six steps in the STI for SDGs Roadmap Development – what has been done (according to the UN Guidelines)

1. Define objectives and scope:

- Objective to increase the R&D's contribution to the achievement of national SDGs;
- Scope: to serve as an action plan for Strategy of the sphere of innovative activity dev-t till 2030;
- to provide STI input into S4 development on national and regional levels.

2. Assess current situation:

the assessment of the STI state in Ukraine are carried out annually by UkrISTEI: http://www.uintei.kiev.ua/en/page/analytical-reference

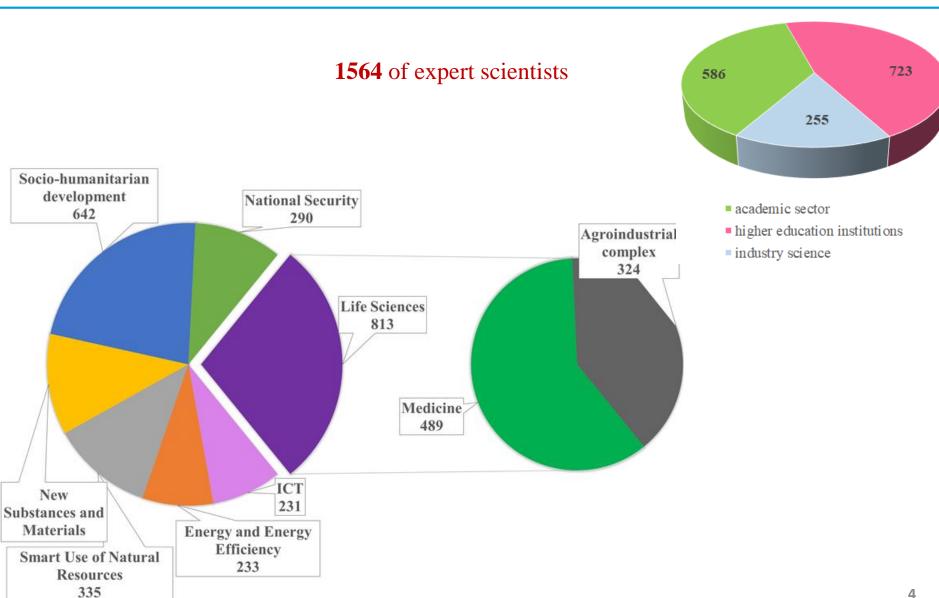
4. Develop vision, goals and targets (foresight):

- The foresight study conducted: 2 stages of surveys of experts from science, business/ gov-t and 4 stages of assessments, incl. the potential of Ukr. science; the international competitive positions of 2852 proposals for technologies and developments (Web of Science and Scopus, Derwent Innovation).
- High-level Expert Councils considered and approved scientific, technical and innovation priorities for 2022-2026, which the MES took into account in the relevant draft Law.
- Dialogue and stakeholder consultations: over 2,500 participants (1,564 scientists and 1,062 practical experts). 230 consultations were held, incl. 100 with scientists, 80 with business / gov-t).
- 5. Develop detailed STI for SDGs Roadmaps for implementation: planned
- 6. Monitor, evaluate and update plan planned





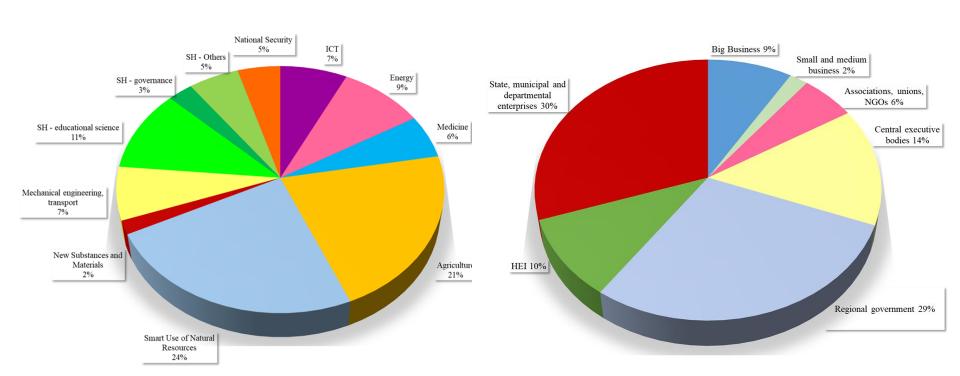








A total of 1,062 expert practitioners participated in the survey







Foresight study: identify priority areas for science and innovation in Ukraine for 2022-2026

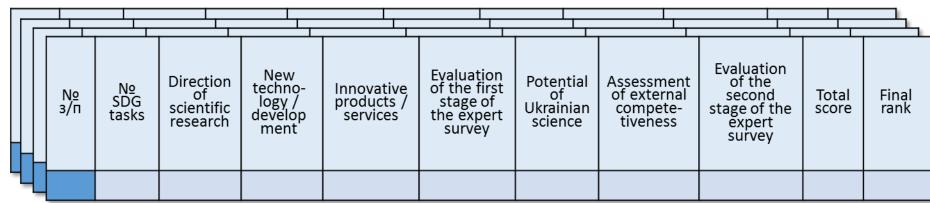
Stages of surveying and evaluation of experts' proposals

Stage 1	Surveying the proposals of scientific experts, developing proposal passports; grouping of proposals according to each of the 17 SDGs;
Stage 2	Evaluating the proposals of expert-scientists regarding the possibilities and existing potential of science to carry out the proposed research (using the Database of UkrISTEI);
Stage 3	Assessment of the relevance of each proposal of expert scientists from the point of view of trends in the development of world science and the latest technologies using international databases: - scientific publications – Scopus, Web of Science; - patent publications and applications – Derwent Innovation;
Stage 4	Evaluation of academic proposals by experts-practitioners from business and authorities from the point of view of their acceptability by the real sector (proposals are ranked according to an integral assessment of compliance with national and global priorities);
Stage 5	Review by the Expert Councils of TOP-30 proposals, formulation and approval of thematic priority directions for each field of research.





UkrISTEI database of all 2852 proposals of technologies&developments and their estimations





2 RODONAHRR	3 MILHE	RICERIA OCRITA	6 чиста вода та належні санітарні умови	7 відновлювана енергія	TA EXCHANNING TA EXCHANNING PROCTAMEN	9 вневаще та інфраструктура	11 CTATION POSBITOR MICT TA CHITISHOT	12 HERMANNE	4 SEPEXENDER MOPCHANK EXOCUCTEM	SEPEXEINER EXOCUTEM CYUII	
2	1	1	3	1	2	4	1	3	1	1	11 SDG 20 tasks



Priority clusters of scientific, scientific-technical and innovative activities in Ukraine for 2022-2026 (final → to draft law)

NN	Name of research cluster	SDG number
1	Digitization of the economy	9 Metalitische
2.	Resource efficient economy and alternative energy	7 ATRICAMILAN PRIOR TO A REPORT AND A REPORT OF A REPO
3.	Rational nature management and circular economy	6 CHANNITON 11 INCOMMENTED COORDINATE OF THE MATERIAL STATES AND SANTITON TO STATE OF THE MATERIAL STATES AND SANTITON TO STATES AND SANTITON TO STATES AND SANTITON TO STATES AND SANTITON TO SANTITO
4.	Health of the nation and safe food	2 7230 3 000 MAIN SERVIN S 9 NOSSITY MOVATOR 12 SESPONDE 14 MINE 15 OKLAD 15 UP SELVEN S 15 OKLAD 15 OKLAD 15 UP SELVEN S 15 OKLAD 15 OKLA
5.	New substances, materials, industrial technologies	8 ECENTHORE AND SAME STATEMENT TO MODELLE AND PROJECTION AND PROJE
6.	Creative and inclusive society	1 MOVERTY 4 QUALITY S GENERAL ROOK AND 10 REQUESTED 11 SECONDARIES 16 CHARLES AND 11 DESCRIPTION OF THE PROPERTY OF THE PROPER
7.	National security and defense	16 researched



Assessment of the potential of the STI system to achieve the tasks of the national SDG's of Ukraine

☐ Analysis of strategies/programs/projects/tools for achieving the priority SDGs and
their corresponding goals, definition of STI tasks for the implementation of the SDGs
☐ Analysis of scientific and technological potential of Ukraine
☐ Development of a list of target indicators for assessing the potential and results of
the impact of STI on the achievement of the SDG's and the implementation of the
assessment
☐ Development of passports of SDG's tasks, which require the support of STI





Input indicators (which enable or contribute to innovative activities)

The share of expenses for the performance of scientific and technical works in the gross domestic product, %

The share of the volume of financing of scientific and technical works at the expense of business in the gross domestic product, %

The share of innovative industrial enterprises in the total number of industrial enterprises, %

The share of employees employed at enterprises belonging to the high- and medium-tech sectors of industry in the total number of employees in industry, %

The share of innovatively active enterprises by all types of economic activity in the total number of enterprises,%

The share of innovatively active small enterprises (with the number of employees from 10 to 49 people) in the total number of enterprises, %

The share of innovation-active enterprises involved in innovation cooperation as consultants, commercial laboratories or private research institutes, % of the total number of innovation-active enterprises (- including the share of innovatively active small enterprises)

Innovation costs for R&D carried out by enterprises in-house, in % of the total amount of innovation costs

The share of investments in intangible assets from the total volume of capital investments, %Investments in intangible assets, thousand UAH





Output indicators (which show the actual result of innovative activity)

The share of the volume of realized industrial innovative products (goods, services) in the total volume of realized products (goods, services) of industrial enterprises, %

The share of exports of goods produced by enterprises of high- and medium-tech sectors of industry in the total volume of exports of goods, %

The share of export of high-tech services (royalties and other services related to the use of intellectual property, computer and information services, research and development services, scientific and technical services), % of the total volume of exports

The volume of export of high-tech services (royalties and other services related to the use of intellectual property, computer and information services, research and development services, scientific and technical services)

The share of added value of the foreign trade "Scientific research and development" in the GDP of Ukraine, %

The added value of the "Scientific research and development" foreign trade in actual prices, UAH million

The share of added value by production costs of enterprises belonging to the highand medium-high-tech sectors of the processing industry, in the total amount of added value, %





Output indicators (which show the actual result of innovative activity)-2

The share of added value by production costs of enterprises belonging to the service sector using high technologies, in the total volume of added value, %Added value based on production costs of enterprises belonging to the service sector with the use of high technologies in actual prices, UAH million

Gross value added in actual prices, UAH millionLabor productivity, the rate of change in % compared to the previous year

The number of national applicants registered in the national office for rights to industrial property objects (inventions, utility models and industrial designs) for UAH 1 billion of the total amount of expenses for scientific research and development

The number of national applicants with industrial property rights (inventions, utility models and industrial designs) registered in the national office

GDP water capacity, 1 cu. m of used water per UAH 1,000 of GDP, GDP at constant prices of the base year

Energy intensity of GDP (1 kg N.E. of supplied primary energy per thousand UAH of GDP), 1 kg N.E. e. per 1000 hryvnias of GDP, GDP at constant prices of the base year



Output indicators (which show the actual result of innovative activity)-3

Carbon capacity of GDP, t CO2 / UAH of GDP, GDP in comparable prices of the base year

Waste capacity of GDP, tons per 1000 UAH of GDP, GDP in comparable prices of the base year

Material intensity of GDP, hryvnias/hryvnias of GDP in actual prices

Share of the volume of innovative products (goods, services) sold by small business entities, % to the total volume of products (goods, services) sold

The share of the volume of implemented innovative products for all types of economic activity in % to the total volume of implemented products (goods, services)









The passport form of the SDG tasks, which require scientific, technological and innovative support for implementation

Nº	Passport details	Sources of information, content of results relevant indicators				
Α	The essence of the SDG task and its connection with the priorities of STI					
1	Sustainable development goal, task number and title	Clarification of expected results				
2	Quantitative indicator of fulfillment of the SDG task	National report of the SDG of Ukraine: Ukraine				
3	Interrelationship with other tasks of this SDG	_"_				
4	Interrelationship with tasks of other SDGs	Analysis and assessment				
5	Priority direction(s) of scientific, scientific-technical and innovative activity	In accordance with the current legislation				
Б	Scientific potential for the implementation of the task					
7	The number of scientific articles published by Ukrainian authors by thematic direction: - in Ukrainian journals	SNSTL, National Library of Ukraine named after V.I. Vernadskyi				
8	- in international journals	Scopus, Web of Science (2018- 2021)				
9	The number of submitted applications and received certificates for patents by thematic direction	Derwent Innovation, Ukrpatent (2018-2021)				
В	Volumes of financial resources from various sources for the implementation of the SDG task					
10	The volume of financing for the research projects according to the State Statistics Service data from all sources	State Statistics Service				
11	The volume of the State budget financing for research projects according to the priority direction	UkriSTEI				
12	The volume of financing from the Startup Fund provided for projects in this direction					
Г	List of tasks of strategic / program documents and action plans for their implementation, which ensur support**	re the achievement of the SDGs and require scientific and innovative				
13	The strategic (program) documents names that ensure the achievement of the SDG and its scientific and innovative support					
14	The strategic document task / tasks name (s) that ensures the achievement of the SDGs through its scientific and innovative support					
15	Expected result and deadline for the task / tasks					
16	The value of the quantitative indicator of the task / tasks implementation in the strategic/program document					
17	The actual state of the task / tasks implementation	4.4				
18	Strategic (programmatic) documents that have don't implement tasks to achieve the corresponding SDG through scientific, technical and innovative support	14				



STI capacity map by regions – bridge to S3

17 ЦІЛЕЙ ДЛЯ ЗМІН У НАШОМУ СВІТІ

SHA 😇 🤐 📓	₹ ₹ 6	E 🗴 😅 🖆 💢 🛞

NN	Administrative centers	Higher education Institutions	Research institutions RIs		Other RIs	0.1	
			academic	non-academic	and HEIs	Others	TOTAL
1	City of Kyiv	33	112	35	9	6	195
2	Vinnytsia region	3	0	0	1	0	4
3	Volyn region	2	0	0	0	0	2
4	Dnipropetrovsk region	13	6	2	1	1	23
5	Donetsk region	7	1	1	0	0	9
6	Zhytomyr region	4	1	0	0	0	5
7	Transcarpathian region	0	2	1	0	0	3
8	Zaporozhye region	7	1	0	1	0	9
9	Ivano-Frankivsk region	3	0	1	0	1	5
10	Kyiv region	1	6	1	0	1	9
11	Kirovograd region	1	1	0	0	0	2
12	Luhansk region	3	0	0	0	0	3
13	Lviv region	8	12	1	0	0	21
14	Mykolaiv region	3	1	1	0	0	5
15	Odessa region	15	9	7	0	0	31
16	Poltava	4	1	1	0	0	6
17	Rivne region	1	1	0	0	0	2
18	Sumy region	4	2	0	1	0	7
19	Ternopil region	4	0	0	0	0	4
20	Kharkiv region	26	28	7	0	0	61
21	Kherson region	2	3	1	0	0	6
22	Khmelnytsky region	2	0	0	0	0	2
23	Cherkasy region	5	0	1	0	0	6
24	Chernivtsi region	4	2	0	0	0	6
25	Chernihiv region	3	1	0	0	0	4
	Total	158	190	60	13	9	



Conclusions of scientific and technological potential analysis of Ukraine

- Not all tasks that require the support of STIs are met by the specific measures of Strategies / Programs of Development.
- ❖ Insufficient financial resources to carry out research in support of SDG's № 2, 4, 7, despite the fact that agriculture and energy are included in the priorities of the Economic Recovery Plan until 2032.
- ❖ The war and caused migration flows poses another limitation for the implementation of the tasks of the SDG a decrease in the number of workers engaged in scientific and technical activities, and the loss of valuable scientific equipment, which can create the basis for a significant technological backwardness of the country. This is especially dangerous in times of the fourth industrial revolution and the aggravation of energy and climate challenges.





Currently

- ➤ Parts of the Roadmap for the SDG's № 2, 7, 9 are under developing.
- ➤ Monitoring and evaluation approaches and methodology are on developing stage to track the progress.

Further activities

- ✓ Together with other central governmental bodies to develop specific activities for the use of STI for the implementation of the tasks of SDG's
- ✓ To use the public procurement tool to increase the amount of STI funding for the implementation of the SDG's and relevant priority areas of science and innovation.
- ✓ Development of programs to provide the research process with consumables for carrying out scientific (scientific and technical) activities
- ✓ Development of programs for sharing state research infrastructure in institutions of higher education/scientific institutions
- ✓ Development of a target program for the return of scientific talents to Ukraine and close cooperation with Ukrainian scientists who remained abroad
- ✓ Development of a unified strategy for the development of science and innovation, where tools for promoting innovation will take their proper place in politics





OUR QUESTIONS

- 1. What is the format of the STI roadmap for the SDGs?
- 2. How to assess STI's contribution to achieving specific SDGs?
- 3. What indicators have been chosen for M&E: are they in the national statistics or are new ones proposed?
- 4. Who carries out the independent evaluation?
- 5. What does a map of scientific potential look like?



Thank you for your attention!

Chayka Darya, <u>d.chayka@gmail.com</u>
Musina Liudmyla, <u>musina@ukr.net</u>
Pisarenko Tetiana, <u>tvpisarenko@gmail.com</u>
Kvasha Tetiana, <u>tkvasha13@gmail.com</u>