United Nations Office of the

High Representative for the Least Developed Countries, Landlocked Developing Countries and Small Island Developing States

Report of the Secretary-General

Implementation of the Vienna Programme of Action for Landlocked Developing Countries for the Decade 2014 – 2024

I. Introduction

The International Atomic Energy Agency (IAEA) supports its Member States, including 30 Land Locked Developing Countries (LLDCs)[1], to build their national capacity in the peaceful, safe and secure use of nuclear science and technology to address global challenges and their socio-economic development priorities. Through its technical cooperation (TC) programme, the IAEA assists them by building human resource capacity through long- and short-term training, rendering expert advice, provision of equipment and transfer of technology. Areas of support cover human health, food and agriculture, water and the environment, industrial applications, safety and energy.

This report highlights major IAEA contributions to LLDCs as of 2019, in the context of the Vienna Programme of Action for Landlocked Developing Countries Roadmap (VPoA), with a focus on those domains that fall within the IAEA expertise, including **ending hunger**; enabling access to **affordable and clean energy**; **building infrastructure** in nuclear applications; addressing issues related to **climate change**; and the special IAEA assistance to help Member States **fight against COVID-19 pandemic**.

II. An overview of recent socio-economic development in landlocked developing countries including impact of COVID-19 pandemic and building back better

In 2020, many Member States required support in the use of nuclear techniques to tackle the COVID-19 pandemic. The IAEA adapted quickly and effectively its operations to continue delivering its mandate while helping countries respond to the pandemic, rendering immediate and unprecedent assistance through the interregional technical cooperation project "Strengthening Capabilities of Member States in Building, Strengthening and Restoring Capacities and Services in Case of Outbreaks, Emergencies and Disasters".

128 countries and territories, including 28 LLDCs, requested assistances to fight against the pandemic and facilitate diagnostics. IAEA assistance focused on the provision of real time reverse transcription-polymerase chain reaction (RT-PCR) equipment necessary for the detection of COVID-19 infections , the most accurate and widely used nuclear-derived method to detect specific genetic material from pathogens, including viruses. In addition to RT-PCR diagnostic equipment, the IAEA provided reagents and consumables to laboratories to speed up national testing. Items include biosafety supplies, such as personal protection equipment (PPE) and laboratory cabinets to ensure the safe handling, storage and analysis of collected samples.

The IAEA is also providing technical advice and guidance to national laboratories, the issuance of guidelines and standard operating procedures, and the delivery of targeted webinar series in

[1] Afghanistan; Armenia; Azerbaijan; Bolivia (Plurinational State of); Botswana; Burkina Faso; Burundi; Central African Republic; Chad; Eswatini; Ethiopia; Kazakhstan; Kyrgyzstan; Lao People's Democratic Republic; Lesotho; North Macedonia; Malawi; Mali; Mongolia; Nepal; Niger; Paraguay; Republic of Moldova; Rwanda; Tajikistan; Turkmenistan; Uganda; Uzbekistan; Zambia; Zimbabwe.

Arabic, French, English, Spanish and Russian. Topics include guidance on establishing molecular diagnostic laboratories, and assessment of required equipment and quality control measures to ensure samples are appropriately collected, stored and analysed using RT-PCR.

III. Status of implementation of the priorities of the Vienna Programme of Action

Infrastructure Development and Maintenance: Energy

Decisions on energy demand and supply infrastructures need to involve all stakeholders, consider all possible energy supply and demand options, and should be consistent with sustainable development goals.

Energy planning is an essential part in developing energy strategies that effectively address concerns over energy resource availability, climate change, air quality and energy security. In 2020, despite the COVID-19 pandemic, the IAEA continued to assist Member States in building and strengthening their capacities for energy system analysis and planning, through an emphasis on distance support and e-learning.

Regarding the introduction of Nuclear Power, IAEA assistance was provided to Member States in the African region embarking on nuclear power programmes, including Ethiopia, Niger, Uganda and Zambia. The Agency is supporting the development of their national infrastructure for nuclear power programmes following the implementation of the IAEA Milestones approach. Assistance was also provided to few African countries to develop a research reactor programme for nuclear energy for power generation.

In 2020, Botswana developed and launched, with IAEA assistance, its Integrated Resource Plan for Electricity, guided by the national development plans. The country is currently implementing its national development plan for the period 2017-2023 which focuses on increasing energy self-reliance. The national team was assisted to consider various scenarios in developing demand and supply models.

Within a new regional project on energy planning in Europe, 25 countries, including all LLDCs from the region, are being supported to understand and independently apply models that assess energy technologies in order to take knowledgeable decisions on how to shape their optimal low-carbon energy mix in the future.

In Armenia, the IAEA is supporting the operational safety and lifetime extension of the Armenian nuclear power plant Unit 2 (ANPP) until 2026, to ensure the continued supply of nuclear power, which produces approximately 40% of the country's energy supply, in accordance with international standards. IAEA support also includes the development of competencies and a knowledge management programme for the ANPP.

In the framework of IAEA's Latin America and the Caribbean regional projects, Paraguay's national team is benefiting from energy planning tools to assess energy demand and supply.

- **Enhance South-South and Triangular Cooperation for the benefit of LLDCs**

The IAEA continues to work towards promoting and enhancing South-South and Triangular Cooperation (SSTC). On this basis, the IAEA maximizes the potential of technically advanced countries and institutions to lead regional initiatives and serve as multipliers, thus ensuring the self-sustainability of technical cooperation activities. To this effect, the Agency was profiled as 'Partner of the Month' in December 2020, by the United Nations Office of South-South Cooperation on their South-South Galaxy website as part of an initiative to spotlight the work of organizations in South-South and triangular cooperation. The published good practices highlighted examples facilitated through the TC programme in the areas of groundwater resource management, non-destructive testing, and sustainability of regional networks.

In 2020, the IAEA launched a four-year technical cooperation project with the Lao People's Democratic Republic aimed at establishing basic non-destructive testing infrastructure for building hydropower plants for electricity generation, which need to meet international safety standards. The project is implemented with the support of experts from Viet Nam in the framework of a formal agreement signed in 2019 between the IAEA and the two countries on Strengthening South-South and Triangular Cooperation.

IV. Follow-up and review

Energy

Promote energy efficiency and support LLDCs to expand and upgrade energy infrastructure, scale up projects on cross-border interconnectors and improve access to energy, including clean, sustainable and renewable energy

Please see section on Energy.

Structural Economic Transformation

Provide tools, technical assistance and capacity building to LLDCs to formulate policies and strategies aimed at diversifying their economies, adding value to their products and supporting development of productive sectors

The Semipalatinsk Test Site (STS) in Kazakhstan, a territory of around 18 000 square kilometres, was the site of nuclear tests conducted between 1949 and 1989. The IAEA has supported the improvement and validation of the quality of radiological studies to enable an accurate decision on transfer of lands, taking into account national and international standards. As of October 2020, 10 410 square kilometres had been assessed by the country, comprising 57 per cent of the total area to be evaluated. The IAEA supported an independent review of the STS characterization reports.

In the Central African Republic, the IAEA supported government efforts to produce the first atlas of groundwater. The findings will be presented to the Ministry of Water Resources in 2021, for consideration regarding regulations.

Promote sustainable development of the agriculture sector in LLDCs including increased agricultural productivity and industrialization of agriculture

Through the IAEA and its partnership with the Food and Agriculture Organization of the United Nations (FAO), several countries around the world, including LLDCs, are improving food security and agriculture by using nuclear and isotopic techniques to protect plants from insect pests and to breed new plant varieties that show improved crop yields, disease resistance and/or drought tolerance. Others use these techniques to protect the health of their livestock and enhance reproduction.

Under a regional project, 28 Member States, including all LLDCs from Africa, received assistance to participate in two sets of interlaboratory proficiency testing schemes on the application of analytical capabilities in order to facilitate the process of accreditation according to ISO standards. Over 30 participants received support to participate virtually in the 3rd Global Minor Use Priority Setting Workshop, which provided them with opportunities to share technical knowledge, discuss and plan for pesticide residue field trials which are critical for setting maximum residue limits that impact the ability to export produce. Member States' laboratories also received technical guidance on using radio receptor assay techniques to screen a wide range of residues and contaminants in food.

In the Central African Republic, the IAEA supported the implementation of new practices that have led to a three-fold increase in cassava yields compared to traditional farming practices. Around 300 farmers in three experimental areas were able to increase their production from 15 tons to 50 tons per hectare. These improved soil and nutrient management practices are being extended to other regions in Central Africa Republic. Brochures were produced with the support of the project and translated into Sango, the local language.

The provincial laboratory network of Uganda's veterinary service has been reinforced with the support of the IAEA. Enhanced capacity in the diagnosis of animal diseases has increased the number of samples analysed annually from 30 000 to over 65 000. Training provided by the IAEA has improved the knowledge and skills of the laboratory staff. Samples are no longer required to be sent abroad and local laboratory performance in proficiency tests and inter-laboratory comparison exercises has improved.

In Lesotho, the Central Veterinary Laboratory, supported by the IAEA, has gained capacity for diagnosis of animal diseases including brucellosis, anthrax and Newcastle disease using molecular and enzyme-linked immunosorbent assay technology. Turn-around time has improved, reliance on other countries for disease diagnosis has been reduced, and enhanced disease surveillance for improved disease management has facilitated access to international markets in line with World Organization for Animal Health requirements. The total number of samples that are routinely received, processed and tested each month has increased by over 25%. During 2020, the project also assisted the Central Veterinary Laboratory in strengthening its artificial insemination programme. Improved semen evaluation has led to better management of insemination programmes for small scale farming communities.

Under a regional project in Africa, the Agency contributed to improve water efficiency and nitrogen use under small scale irrigation systems in the participating Member States, including Botswana, Ethiopia, Mali, and Uganda. IAEA also delivered packages of climate smart improved technologies and practices for effective water and nutrient management and strengthened human capacities of scientists and farmers across the Member States.

Through another regional project also in Africa, related to the use of the sterile insect technique (SIT), an environmentally-friendly insect pest control method, a georeferenced fly round system has been developed to monitor tsetse populations and distribution with reduced efforts in terms of human and logistic resources. This system has been used to map the distribution of Glossina swynnertoni (a savannah tsetse fly) in the United Republic of Tanzania and has been transferred to Uganda, Zambia and Zimbabwe. The cost-efficiency of SIT technology has also been addressed. The use of unmanned light aircraft (drones) with embedded automated tsetse release machines has been validated and Burkina Faso, Chad, Uganda and Zimbabwe have obtained authorization from their authorities to operate drones for tsetse control.

The project also provided support to the Pan African Tsetse and Trypanosomiasis Eradication Campaign (PATTEC) of the African Union Coordination Office. A bankable project proposal with the main goal being to accelerate the implementation of the PATTEC initiative in Africa and to develop a communication strategy as an advocacy tool to mobilize resources was developed.

In Botswana, the capacities of the national network of laboratories have been strengthened with the support of IAEA. The laboratories have received a wide range of sophisticated analytical instrumentation and appropriate training for their staff, and the BNVL is now accredited up to the standard of ISO accreditations for testing food exports and local monitoring programmes for over 60 residues or contaminants. During 2019, the annual number of analyses grew to more than 6000 for beef, dairy and feed samples– including over 4000 milk samples. Analyses

are also carried out for over 5000 samples under the national Vulnerable Groups and School Supplementary Feeding Programmes. New capacity at the country level has enabled the implementation of national pesticide control legislation.

Technical assistance to seven countries including Lao PDR and Mongolia affected by the outbreak of African swine fever continued throughout 2020 under an IAEA regional project. Immediate emergency support included the provision of nuclear-derived sampling and extraction kits (ELISA) and polymerase chain reaction (PCR) kits for rapid testing. Technical guidance, standard operating procedures and laboratory protocols for laboratory and veterinary staff were also provided.

Progress in human capacity building and infrastructure development support in the Asia and the Pacific region continued in 2020 under an IAEA regional project in several countries including Lao PDR and Nepal. Using virtual expert missions, guidelines were developed for *Design and Evaluation of Mosquito Population Suppression Trials and Including Epidemiological Analysis*. Long-distance expert assistance was also arranged to support Member States in conducting statistical analyses of laboratory rearing data and ovitrap data to monitor the density of adult Aedes mosquitoes in sterile insect technique (SIT) pilot trials. Entomological equipment and consumables continued to be delivered to Member States in the region throughout 2020.

The capacity of veterinary laboratories from the Europe and Central Asia, including all IAEA LLDCs in the region, for the early detection of vector-borne diseases of animals, including those with zoonotic potential, has been enhanced with the support of the IAEA. In 2019, the project trained specialists on the use of nuclear-derived techniques in the diagnosis of African swine fever, African horse sickness, bluetongue, West Nile fever, Usutu, Q fever, leishmaniasis, equine infectious anaemia and others. Diagnostic technologies for the priority vector-borne diseases were updated and adapted for implementation in the counterpart laboratories.

In Latin America and the Caribbean, under an IAEA regional project, new varieties of rice, tomato, quinoa and potato have been developed using mutation breeding techniques. These crops have improved characteristics, including pesticide and disease resistances boosting crop production and improving food security. The team of researchers assembled through this project has managed to develop six improved mutant lines, including potato in Bolivia, which are in the process of registration.

Also in Bolivia, where high population of fruit flies in areas of fruit and horticultural crops is a prevalent problem, the IAEA supported the strengthening of national capacities to establish a fruit fly control at pilot scale using an integrated pest management approach including the Sterile Insect Technique (SIT).

The IAEA is supporting Paraguay to improve genetic banks that allow genetic material from genetically superior animals to be available for its preservation and dissemination. This project will contribute to the development of existing programmes and projects in the country that seek to strengthen and develop the national livestock.

Encourage development of national science, technology and innovation policies and infrastructures in LLDCs and support capacity development of LLDCs in research and innovation

IAEA's assistance on nuclear medicine and radiotherapy facilities: The IAEA also supports Member States, including LLDCs, in developing, evaluating and introducing appropriate diagnostic and therapeutic modalities that use nuclear medicine and diagnostic imaging

technologies for non-communicable diseases, such as cancer and cardiovascular disorders. IAEA support focuses on establishing nuclear medicine and radiotherapy facilities, training of medical staff and technicians, the procurement of equipment, and the set up and the improvement of radiation safety for patients.

The integrated mission of the IAEA Programme of Action for Cancer Therapy (PACT), referred to as an 'imPACT Review' is a unique assessment tool used to support Member States in their efforts to improve comprehensive cancer control in their country. This is done in partnership with World Health Organization (WHO) and International Agency for Research on Cancer (IARC) with the aim of providing governments and their partners with a baseline situation analysis and a set of recommendations to guide cancer control planning and investments across the cancer control spectrum, from prevention to palliative care.

Progress was made towards establishing a systematic follow up mechanism for countries which have had imPACT Reviews or other cancer assessments. In 2020, Armenia, Benin, Burundi, Lesotho, and Niger, received support from a multi-disciplinary group of international experts to assess progress towards the implementation of cancer control recommendations. These discussions, held virtually, also sought to identify barriers and additional programmatic support required to advance in areas ranging from cancer prevention to palliative care. In the annex, a list of all LLDCs that received imPACT and other support since 2014 is provided.

Expert advisory support was provided to Burkina Faso in the development of a national cancer control plan.

The IAEA supported the efforts of Niger to establish its first radiotherapy, inaugurated in March 2021. Besides capacity building and provision of equipment, the IAEA also supported Niger to develop the required safety regulations needed for radiotherapy services. The Cobalt-60 source was also delivered to the National Cancer Centre (CNLC) which is expected to operate soon.

In 2020, Paraguay received assistance to have a hybrid system of cancer diagnosis that requires imaging studies that in many cases use small amounts of radiation. Equipment for X-rays; computed tomography (CT); magnetic resonance imaging (MRI); positron emission tomography (PET) and single-photon emission computed tomography (SPECT) provide functional information combined with a spatial registration in the patient's body in just one session, achieving a more accurate diagnosis while increasing convenience for patients and efficiency in scheduling. In addition to the equipment, Paraguay has access to training at the Research Institute for Health Sciences (IICS).

The IAEA also supported Nepal in establishing a Nuclear Medicine Department at the BP Koirala Memorial Cancer Hospital in Bharatpur. The hospital, as the main cancer management institution in the country, can provide quality services on radioimmunoassay and imaging studies for early diagnosis of cancers, cardiovascular diseases and other medical conditions.

Human Capacity Building: Human resource development remains a priority for LLDCs. The successful implementation of nuclear-technology related programmes requires the training of skilled mid-level personnel such as engineers and technicians through on-the-job and academic programmes.

In 2020, the IAEA launched an interregional technical cooperation project targeting LDCs, some of which are also LLDCs, to build human and institutional capacities in nuclear sciences and technology with special emphasis on their specific needs and development priorities. A draft LDCs Action Plan 2021-2025 was developed in 2020 with target indicators to be achieved

through assistance in enhancing human and institutional capacities and further developing the radiation safety infrastructures at the country level.

COVID-19 Assistance: The IAEA provided diagnostic kits and equipment to 28 LLDCs to enable them to perform testing and diagnosis. The Agency has also conducted COVID-19 related webinars to support health professionals who work in radiation medicine during the global pandemic in Member States including 336 professionals in LLDCs Member States.

The webinars provide advice to nuclear medicine, radiology and radiation oncology departments, and offer best practices in rotation policy, use of personal protection equipment, and other institutional considerations and experiences. The IAEA has made online information materials on COVID-19 available on a dedicated page on the Human Health Campus. The page offers responses to frequently asked questions from laboratory and health professionals, and includes links to recorded webinars, COVID-related articles, and other material.

Building Radiation Protection Infrastructure: The IAEA is providing support to Member States, including LLDCs, in building their regulatory infrastructure to ensure radiation protection and safety of people, society and the environment. For example, in 2020, the IAEA supported capacity-building for the governmental authorities and specialists in Kyrgyzstan. The participants visited the State Office for Nuclear Safety of the Czech Republic and the Agency of Nuclear and Radiation Safety of Georgia to gain an understanding of how different regulatory bodies are organized and function, with a special emphasis on how authorization and inspection activities for radiation sources and radioactive waste facilities are carried out.

The IAEA is assisting Paraguay to incorporate equipment, improve the structure of the regulatory framework, and train human resources to develop national capacities to establish radiation safety and national security infrastructure.

Bolivia benefitted from IAEA support to strengthen its nuclear legislative and regulatory framework and support has been given to the national safety authority for human capacity development and tools to fulfil its mandate of licensing and inspecting facilities that use ionizing radiation.

Promote multi-stakeholder dialogues and experience sharing

Please see SSTC section above.

Means of implementation and international support

Enhance efforts of LLDCs to mobilize adequate domestic and international resources

As part of its efforts to help Member States mobilize the necessary resources for improving their cancer control capacities, the IAEA has continued to assist LLDCs develop bankable documents. During 2019-2020, the IAEA supported Chad, Eswatini and Uzbekistan to develop comprehensive, multi-million-dollar bankable documents for establishing nuclear medicine and radiotherapy services.

Other areas

Enhance climate change mitigation and adaptation and disaster risk reduction efforts and support resilience building of LLDCs to the adverse impacts of climate change, natural, manmade, technological, biological and environmental hazards and environmental degradation, including desertification, land degradation, biodiversity loss, drought and receding glaciers

As part of the capacity building process for energy system analysis and planning, the IAEA provides assistance to Member States for the evaluation of the role of nuclear energy in national

climate change mitigation strategies through a comprehensive set of IAEA tools and methodologies available to Member States.

In 2020, all LLDC Member States in Europe and Central Asia received assistance to enhance the productivity and resilience of major food crops (legumes, cereals and others) to climate change through mutation breeding to produce varieties with increased drought and salt tolerance, enhancing productivity and other desirable traits.

Assistance was provided to 27 Member States in Europe and Central Asia, including Armenia, Azerbaijan, and Kyrgyzstan in energy planning as well as in determining the role of small modular reactors in helping meet climate targets. The assistance aims to help countries understand and independently apply models that assess energy technologies in their specific national context so that they can take knowledgeable decisions on how to shape an optimal low-carbon energy mix in the future. In 2020, a virtual regional training course trained 37 energy and climate specialists with the tools and capacities needed to evaluate, prioritize and communicate measures designed to reduce energy-demand related greenhouse gas emissions. Furthermore, some of the participating Member States are developing country-specific case studies for in-depth analyses of energy technologies, such as conducting a socioeconomic evaluation of a potential small modular reactor deployment scenario in their country.

In Botswana, the IAEA assisted the country in establishing precision drought-testing or managed-drought stress testing in pilot mode in three locations during 2020, based on a careful assessment of prevailing environmental characteristics and climate challenges affecting crop productivity across the nation. The project aims to develop improved varieties of cowpea and sorghum with tolerance or resistance to drought and to parasitic weeds that devastate crop yields. The precision drought-testing pilot established in Botswana is intended to identify even small changes in crop yield in improved varieties under drought stress, and is planned to be modelled in other parts of sub-Saharan Africa to develop improved mutant varieties that continue to have stable performance under intensifying and frequent drought stress imposed by climate change.

Under an IAEA regional project on isotope hydrology, Paraguay and Bolivia have been pilot countries for the implementation of the IAEA Water Availability Enhancement Project, which aims to improve the long-term access to freshwater by using science-based, comprehensive assessments of national water resources. Relevant water authorities and stakeholders participated in virtual training courses and benefitted from relevant equipment. In parallel, Bolivia implemented a national project aiming to improve national capacities for the application of isotopic techniques in water resources assessment and management in arid zones of the South Lipez Province.

Drawing on the Agency's experience supporting Member States in using nuclear and nuclear derived techniques to enhance global response preparedness to combat zoonotic diseases such as COVID-19, Ebola, avian influenza and Zika, the Zoonotic Disease Integrated Action (ZODIAC) project was launched in 2020. The project, through its interconnected pillars, will increase Member States' capacity for early detection and monitoring of pathogens in the animal–human interface. It will support countries in creating appropriate ZODIAC relevant infrastructure by providing equipment, training and necessary research and development tools.

The project will maintain a network of participating laboratories for storing and exchanging relevant scientific and technical information. ZODIAC also envisages providing increased access to reliable data for Member States to improve understanding of the impact of zoonotic diseases on human health and to support science based decision making using radiation imaging technologies or radiomics. At the General Conference in 2020, Member States adopted a resolution on ZODIAC, and in November of the same year, the Board of Governors of the

IAEA approved an off-cycle interregional technical cooperation project aimed at building the infrastructure and human capacity needed to implement ZODIAC activities. The Agency will continue to seek opportunities for establishing partnerships with national and international organizations as well as non-traditional partners to create synergies with other initiatives.

Help LLDCs deal with the impacts of the COVID-19 crisis

At the outset of the COVID-19 outbreak, LLDCs were very much in need for support and have turned to the IAEA to provide them with support. The IAEA quickly responded and adjusted to new circumstances reviewing and prioritising the planned support in accordance within available means.

The IAEA will continue to support its Member States, including LLDCs, to fight COVID-19 disease through the provision of equipment and training, as needed and as resources become available. In addition, the IAEA will continue to implement the planned activities under its Technical Cooperation current programme and adjust as necessary to address the evolving needs and in particular those that have been most affected by the pandemic.

Looking forward, and in order to be better prepared to deal with the challenges of zoonotic diseases, the IAEA has launched a new initiative entitled 'Zoonotic Disease Integrated Action' or ZODIAC. It will allow for the continuation of the current assistance as well as its integration to strengthen the ability of the IAEA and its Member States to prepare for and respond to zoonotic disease threats and outbreaks, which will include, but not be limited to: enhanced national capabilities of Member States for surveillance, early detection and intervention against emerging/re-emerging zoonotic diseases; availability of real-time decision-making support tools for timely interventions; access to novel technologies for early detection of emerging zoonotic diseases; and access to data on the impact of zoonotic diseases on animal and human health.

Support LLDCs to remove the barriers to achieving gender equality and the empowerment of women and girls

The IAEA mainstreams gender considerations in all relevant programmatic activities, including efforts to enhance the participation of women as training participants, fellows, scientific visitors, project counterparts, researchers, experts and panellists. IAEA staff and national counterparts are encouraged to use a gender lens when designing and implementing IAEA projects.

In March 2020, the IAEA launched the Marie Sklodowska-Curie Fellowship Programme (MSCFP), which aims to help grow the number of women in the nuclear field, supporting an inclusive workforce of both men and women who contribute to and drive global scientific and technological innovation. The programme has supported one hundred female students in 2020, including 10 from LLDCs Member States, through scholarship for up to two years for Master's programmes in nuclear science and technology, nuclear safety and security, or non-proliferation studies.

In 2020, the IAEA supported the establishment of a national chapter of Women in Nuclear (WiN) in Lesotho. The chapter aims to support equal female participation in nuclear science and technology by empowering women and promoting their contribution to technical, scientific and leadership roles in the field.

V. Conclusions and recommendations

The IAEA has been offering extensive assistance to all LLDCs Member States, using nuclear science and technologies, to help them build their national capacities to achieve their sustainable development goals (SDGs).

Partnership and coherent coordinated efforts by all stakeholders are important for the delivery of the assistance. South-south partnership and triangular partnership proved to be particularly important for building their capacities.

Statistical Annex

IAEA LLDC Member States	**Assistance Provided in 2019 In Euro**	**Assistance Provided in 2020[i] In Euro**	**imPACT Review 2014-2021**
Afghanistan	107 909	431 517	imPACT Review 2018
Armenia	210 898	1 062 771	imPACT Review 2019 and Follow-up 2020
Azerbaijan	1 208 877	331 433	
Bolivia (Plurinational State of)	122 830	230 068	Cervical cancer and cancer control planning follow up 2021
Botswana	556 706	543 009	
Burkina Faso	537 857	315 430	imPACT Review 2019 NCCP support 2020
Burundi	158 725	269 188	imPACT Review 2017
Central African Republic	296 163	147 709	imPACT Review 2020
Chad	247 104	247 483	Bankable document and NCCP support 2021
Eswatini	176 937	48 284	imPACT Review 2017 Bankable document
Ethiopia	477 439	1 399 027	
Kazakhstan	213 599	431 198	imPACT Review 2016
Kyrgyzstan	154 807	170 203	imPACT Review 2015
Lao People's Democratic Republic	363 220	223 426	imPACT Review 2014
Lesotho	613 847	501 949	NCCP support 2017
North Macedonia	163 992	721 501	imPACT Review 2018
Malawi	376 050	450 022	NCCP support 2018 Bankable document
Mali	370 285	302 637	imPACT Review 2020
Mongolia	267 074	882 030	
Nepal	414 013	933 066	imPACT Review 2020
Niger	305 883	913 748	Bankable document

Paraguay	261 403	99 787	imPACT Review 2016 NCCP support 2021
Republic of Moldova	933 497	737 998	
Rwanda	245 372	277 041	imPACT Review 2014
Tajikistan	1 374 235	451 497	
Turkmenistan[ii]			
Uganda	509 559	546 119	
Uzbekistan	363 742	573 416	Bankable document imPACT Review 2014
Zambia	232 294	640 003	NCCP support 2021
Zimbabwe	380 030	345 905	imPACT Review 2010

[i] These figures are preliminary.
[ii] Turkmenistan became an IAEA Member State in 2017.