PROJECT DOCUMENT TEMPLATE
14TH TRANCHE OF THE DEVELOPMENT ACCOUNT

1. EXECUTIVE SUMMARY

Project Code and Title:	Food-Water-Energy nexus support to post-COVID-19 recovery in Eastern Europe, Western Balkans, Central Asia, the Middle East and Africa
Start date:	1 January 2022
End date:	31 December 2025
Budget:	$700,000
Target countries:	Albania/Montenegro,[1] Belarus, Kazakhstan, Uzbekistan, Iraq, Algeria, Nigeria, and Namibia
Lead Entity:	UNECE
Other UN DA Implementing Entity/Entities:	ESCAP, ESCWA, ECA, UNEP, UNU-INWEH, WHO/ Europe
Other Collaborating Entities within the UN Secretariat and System:	UN Resident coordinators/UNCTs

[1] One of the two countries will be selected by the inception phase of the project. Contact has already been made, but further time is needed to understand where conditions may be most favorable for project implementation

Brief description:

Food, water and energy are integrally related and strongly interdependent, and core to facilitating sustainable development. The COVID-19 pandemic has highlighted the need to ensure food security, access to clean water and sanitation, including the promotion of adequate hand hygiene and energy and raw material security. The integrated and indivisible management of the essential resources using a nexus approach enhances the resilience of societies when facing difficult situations such as Covid-19.

The proposed project aims to develop a sustainable and integrated management approach interconnecting the food, water and energy nexus and helping to manage the impact of the Covid-19 situation. More specifically, the project will assist the beneficiary countries to identify and develop best practices and measures to apply a cross-cutting nexus approach to food systems, water and energy management. The project is designed to strengthen natural resource management by harnessing the interlinkages of food-energy-water nexus to provide targeted assistance to selected beneficiary countries and promoting multilateral cooperation at national, regional and inter-regional levels for socio-economic recovery ecosystem restoration and resilience building in rural and urban settings.

The three pillars of the projects are:

- Food security and sustainable production and consumption patterns: End hunger, achieve food security and promote sustainable food systems and agriculture
- Water, sanitation and hygiene: Ensure availability and equitable access to water, sanitation and hygiene for all for good health and well-being
- Energy and raw material supply: Ensure secure, resilient and sustainable consumption and production patterns

There are eight beneficiary countries of this project in Eastern Europe, Western Balkans, Central Asia, the Middle East, and Africa that face significant food stress and challenges in the area of water and sanitation. These counties also possess considerable energy potential, which could be improved and enriched by improved awareness of intersectoral links and impacts. The proposed project will promote applying a diverse set of UN tools and accumulated experience for a single purpose, i.e., to support food, water and energy security in beneficiary countries.

The key stakeholders will be policymakers responsible for developing national policies on food, water and sanitation, and energy resources, as well as private sector entities, which should play an active role in investments to employ advanced technologies with all related benefits. The project further seeks to help the Member States with economies in transition to identify best practices, measures and procedures relevant to sustainable recovery from the Covid-19 pandemic. The proposed beneficiary countries do not have the necessary policy and regulatory frameworks to enable progress on these fronts.

2. BACKGROUND

2.1. Context

The COVID-19 emergency has brought in complex challenges not only on the health front but on a broad spectrum of essential services related to food, water, energy and raw material supply, leading to a general deterioration in social protection. Since the crisis emerged quite rapidly, these services were not adequately prepared to withstand the economic disruptions that came in its wake. Widespread food availability, water and sanitation issues, deceleration of green energy projects, and scarcity of raw materials required for various sectors, including Personal Protection Equipment (PPE) and essential drugs for health care, were seen in many countries. The resulting social impact included unemployment, worsening of hygiene, sanitation and general health of a vast majority of the population but also it affected predominantly women, youth, elderly, low-wage workers and other vulnerable groups in rural and urban settings that had already been at risk.

The UN General Assembly Resolution 74/270 recognized that the pandemic might reverse "hard-won development gains and hamper progress towards achieving the Sustainable Development Goals "[1]. Thus, our societies are living a profound change that has led to people suddenly being threatened with the loss of healthcare, access to water, sanitation, food, energy, and raw material security. [2] [3]

A range of social protection programmes and essential services will need to be scaled up by governments for more resilience through a set of concrete actions to

- Build and maintain essential food and nutrition services and nature-based solutions in rural and urban areas:
- Ensure continuity and quality of water and sanitation services, including the provision of access to safe hand hygiene facilities, for all and in all settings:
- Provisioning of clean energy and raw materials required for society, including the healthcare sector.

The COVID-19 pandemic has highlighted the need to adopt public health measures to prevent and contain the spread of disease, including access to PPEs, social distancing and the promotion of adequate hand hygiene. These, in turn, have wide-ranging implications. By way of illustration, the need for social distancing can require countries to put economic activity on hold to a certain extent. Having nutritious food is key to building body resistance against infection. Frequent hand hygiene requires the availability of hand hygiene stations in critical settings and a steady supply of safe drinking water, which may be challenging to secure for people already facing barriers in access to water and sanitation, thereby threatening an effective and inclusive recovery and creating additional infection risks. Continued access to clean energy and critical raw materials is another part of the jigsaw that hold together the supply of essential service

The project is designed to strengthen natural resource management and access to essential services by harnessing the interlinkages of food-energy-water nexus to provide targeted assistance to selected beneficiary countries and promoting multilateral cooperation at national, sub-regional, regional and inter-regional levels for socio-economic recovery ecosystem restoration and resilience building in rural and urban settings. The project will support the more sustainable management of natural resources to build resilient livelihoods through healthy ecosystems and regenerative approaches for the safe and secure provisioning of food, water, energy and raw materials through the innovative methodology of sustainable and integrated management of resources within the context of food-water-energy nexus, using a system and broad stakeholder approach. It incorporates principles of circularity to reduce inefficiencies throughout the life cycle. In this way, the project aims to incorporate innovation in its design and throughout its implementation.

The project will contribute to the UN framework's second pillar for the immediate socio-economic response to COVID-19 on "Protecting People: Social Protection and Basic Services".

The connected regions in Eastern Europe, Western Balkans, Central Asia, the Middle East and Africa face an elevated climate change risk. They are therefore most vulnerable to food-water-energy disruptions, which are further exacerbated during this pandemic. The project activities will include support for innovative urban and rural food systems approaches; nature-based solutions; improvement of water, sanitation and hygiene; and enhancing the supply of energy and raw material supplies in the short-term as well as capacity-building activities aimed at strengthening resilience and preparedness in the medium and longer-term by reducing risks and improving vigilance to future pandemics. To achieve this objective, the project's analytical framework is structured into two components: (1) Recover and (2) Build Resilience.

Therefore, the project supports international efforts to build resilient post-pandemic societies by exchanging information, scientific knowledge, best practices and capacity building. In supporting the rebuilding of economies and societies by assuring a safe, sustainable and secure supply of natural resources, the project activities will support the development of healthy ecosystems, enhance the resilience of optimal supply chains linking more directly rural production and urban consumption areas and build a multilateral network connecting food-water-energy[4] and raw material sectors to help quickly adjust to the post-pandemic realities, many of which have exacerbated the impact of COVID-19 and have the potential also to heighten the effect of any future shock. Not least among these drivers is climate change, with its vast impact on ecosystems and the resulting challenges in the availability of food, water and energy, especially in the countries in arid regions of Central Asia, the Middle East and Africa.

The COVID-19 crisis has shown that those impacted are the world's poorest and most vulnerable, with significant intergenerational implications. Therefore, efforts to leave no one behind the need to focus on many fronts, including providing essential services such as food, water and sanitation, energy, and raw materials. By focusing on these aspects, the project aims to build vibrant communities and integrate the no one left behind perspective as well as a human rights-based approach, as activities will contribute to the progressive realization of fundamental social, economic and cultural rights, including the human right to safe and healthy food and the human rights to safe drinking water and sanitation. For the first time in human history, over half of the world's population lives in cities. By 2050, two-thirds of humanity could be living in urban areas. Cities are therefore important ground and significant drivers of change within the food/water/energy nexus. Furthermore, the project incorporates a gender lens. It recognizes that this is indispensable at various stages of providing essential services.

In the area of water, sanitation and hygiene, the project's activities will be carried out with due regard to the fact that facilities need to be designed and built to meet the needs of women and girls, including concerning menstrual hygiene management, the need for lighting and appropriate security, and other relevant considerations. Assuring a continuous supply of safe drinking water and assuring sanitation is the first pillar of resistance.

The COVID-19 crisis has particularly affected city dwellers, with poverty striking the most vulnerable, including children, youth, the elderly and ethnic groups. Countries, regions and cities (notably the mid-sized and larger ones) were facing enormous problems providing food for all. Building urban resilience to crisis and climate change is a complex, multi-stakeholder driven process. Supporting ecosystem restoration, food forests and multipurpose urban green spacesregenerative and sustainable production, as well as rural-urban-peri-urban linkages with a better environmental footprint is a second, essential, and nature-based priority of the fight for food security.

The third pillar is the continuous provisioning of energy and the raw material necessary for society, including the health sector, to manufacture drugs, supplies and equipment, and maintain a minimum quality of life. Secure supply chains of all these three pillars have been under threat of breakdown at various times during and after the pandemic outbreak. They could be severely challenged in the years ahead. In the rapid recovery from these impacts and build better resilience to future shocks, it is essential that an "integrated and indivisible" approach promoted by the 2030 Agenda for Sustainable Development be applied.

Nexus approach to addressing the challenges in food-water-energy provisioning

This project will support building national capacities in beneficiary countries to adopt a Food-Water-Energy Nexus approach to sustainable natural resources management.

Nexus approach can be defined as a set of complex interactions and feedback loops between human and natural systems affecting the natural resource base. The resource base, in turn, refers to both natural and socio-economic resources as they relate to a given environment, such as interactions between energy, food, land, materials and water. Underlying the thinking is the belief that the nexus approach can generate relevant information about critical interlinkages that will enable decision-makers to plan for robust governance and management across resources and spatial scales. The nexus approach also provides opportunities to identify and promote integrated planning, management, and governance of natural resources.

However, natural resource production, value-addition and consumption also have their downsides. The resources are often finite, requiring enormous energy and other resource inputs to transform them for productive use and leaving behind a large volume of waste and related externalities. The production and consumption of natural resources have an impact on land, forests, water, soil, biota and the atmosphere. For example, land degradation, deforestation, topsoil and biodiversity loss, carbon emissions, contamination of freshwater sources and air pollution are some of the negative impacts. Taken together, resource exhaustion, environmental and health externalities may significantly affect business-as-usual even in the short-term future. Notably, the COVID-19 pandemic illustrates how a global health event may affect and change natural resource and energy use.

The nexus approach to the management of food-water-energy services is essentially based on the principles of responsibility towards the planet; integrated and indivisible approach to the management of resources; systems view; social license to operate; full life-cycle view; service orientation; comprehensive resource recovery; circularity; zero waste; zero harm; safety, prevention and preparedness; local and community-based approaches, hybridization and connectedness to other sectors; as well as the continuous strengthening of core competencies and capabilities. A nexus can be defined as complex interactions and feedback loops between human and natural systems affecting the natural resource base. The resource base, in turn, refers to both natural and socio-economic resources as they relate to a given environment, such as interactions between energy, food, land, materials and water. The nexus approach focuses on addressing climate change and building resilience to natural disasters and other emergencies such as the current COVID-19 pandemic.

The nexus approach ensures more integrated and sustainable perspectives of natural resource use beyond the traditional sectoral “silos”, which can be applied at all scales. The nexus approach can generate relevant information about critical interlinkages, enabling decision-makers to plan robust governance and management across resources and spatial scales. The nexus approach also provides opportunities to identify and promote integrated planning, management, and natural resources governance.

This project will strengthen the integrative approach, primarily focusing on three critical areas of the Food, Water and Energy (FEW) nexus described below.

(a) Food security and nature-inclusive food ecosystems

The vulnerable balance between food availability and food needed, particularly in urban areas, was heavily distorted during and following the COVID-19 pandemic. It resulted in growing levels of inequality, food shortages in some regions and food over-availability and waste in others. The consequential negative impacts on the food security for low-income households, remarkably, in urban areas, as well as on the environment, and the economy, suggest the need to explore new ways of making food available also in times of crisis without impacting the environment even more and mindful of climate change. This includes improving the situation in already existing food deserts in cities, and of using nature-based solutions, data collection and baseline

assessments for optimal results. This will be an essential element for ensuring resilience and support future preparedness and response. Building shock-proof sustainable and nature-inclusive production and consumption patterns using nature-based solutions mindful of digital solutions contributes to well-functioning more resilient and circular ecosystems which will be crucial to the FEW nexus.

Resilience and green recovery include addressing climate change and its impact on food systems and their linkages with forests; deforestation, as well as the synergies of forests, agricultural policies, and urban/rural landscapes. Targeted interventions focusing on close urban-rural links, food forests in cities, urban agriculture, waste prevention and revalorization are critical for building back better and greener. The current situation impacts water, land resources, forests and biodiversity. The ever-growing agricultural production accounts for 70 per cent of the water used throughout the world. It requires more and more land and deforestation to satisfy the demand of an increasing population in cities. Distortions in food production and availability mean also misusing precious freshwater and groundwater resources, land and forests, for food and having less water available for drinking water provision, sanitation and hygiene – particularly in cities.

(b) Water, sanitation and hygiene

The COVID-19 pandemic has highlighted that people without access to safe water and sanitation are the most vulnerable to the spread of infectious diseases. Indeed, in the absence of a vaccine or effective treatment, frequent handwashing with soap was recommended as a simple but effective intervention to limit the spread of the COVID-19 virus (CDC, 2020; WHO and UNICEF, 2020). Hand hygiene remains an effective means of protection, limiting the continuous spread of COVID-19 and other infectious diseases burdening the public health systems. Providing safe, reliable and resilient Water, Sanitation and Hygiene (WASH) services for everyone and in all settings is a crucial precondition for resilient societies to spread disease. It is a crucial pillar for WASH-related disease and risk prevention in the long term.

According to the WHO, a single person needs 20 to 50 litres of water free of harmful chemical and microbial contaminants daily for drinking and hygiene (WHO, 2020). This recommendation contrasts with the fact that 2.1 billion people still lack water accessible on-premises, available when needed and free from contamination. Besides, 4.5 billion people lack safely managed sanitation services (UN, 2018). In the pan-European region, one of the epicentres of the COVID-19 pandemic, despite significant progress in increasing access to safe drinking water and sanitation, over 16 million people still lack access to essential drinking water services, and 29 million people need basic sanitation, with significant inequalities between rural and urban areas (WHO and UNICEF, 2021). In the water-scarce Arab region, nearly 87 million people lack access to an improved drinking water source on-premises. More than 74 million people lack access to basic handwashing facilities with water and soap on-premises. The problem is acute in sub-Saharan Africa, where 783 million people do not have clean drinking water.

In this light, efforts to ensure WASH services need to be intensified, with a particular focus on safe WASH services in institutional settings and on existing inequities that often constitute systemic barriers to access to water and sanitation. An equity lens is also vital to ensure inclusive recovery after the COVID-19 pandemic and enhanced resilience to future shocks. Policymakers will have to take measures and establish policy frameworks that are inclusive and leave no one behind, ensuring adequate WASH in health care facilities and schools. This requires that they map out the situation of all population members, including vulnerable and marginalized groups such as people living in informal settlements, homeless people, refugees or migrants. However, data on these groups is often unavailable, aggregated, or of low quality, underlining the need to improve the evidence-based on equitable access to water and sanitation, as well as on WASH conditions in institutional settings. Reliable, credible and disaggregated WASH data can play a crucial role in informing decision-making and ensuring progress on the implementation of the 2030 Agenda and vastly contribute to the FEW nexus.

(c) Ensuring resilient energy and raw material supply chains

The third aspect of the FEW nexus is the continuous provisioning of energy. The raw material is necessary for all social sectors to maintain a minimum quality of life, including the health sector to manufacture drugs, supplies, and equipment. Supply chains of all these three pillars have been under threat of breakdown at various times during the pandemic. They could be severely challenged in the months and years ahead. The front-line health workers often lacked PPEs, equipment and testing kits as raw material supplies are harder to reach. For example, many SARS-COV-19 virus testing kit manufacturers produced below capacity due to a lack of raw materials. Many drugs are being tested to fight the infection. Still, the supply of any drug to the vast population will remain uncertain due to the lack of essential raw materials.

The Active Pharmaceutical Ingredients (APIs) and excipients of several drugs, including antibiotics, incorporate chromium, cobalt, copper, magnesium, manganese, molybdenum, sodium, nickel and many others. Identifying alternative local or regional sources is critical in situations like the current pandemic with an immediate supply crunch. Further, sustainable management and use of such minerals are essential to ensure their availability in the long term. Local and regional sourcing must also be incorporated as part of the regular supply chain to ensure inbuilt resilience[5].

The recovery from the severe economic downturn will require a massive fiscal response. Numerous countries and multilateral financial institutions have announced many such measures. To stay on course to meet the goals of the 2030 Agenda, the related massive investments must be directed towards a “green” and not a “brown” recovery. However, the materials required for a green energy transition, such as copper, cobalt, lithium or rare earth elements (REEs), are currently not sufficiently accessible. The metals and minerals required for solar photovoltaics, batteries, electric vehicle motors, wind turbines, and fuel cells face key sustainability challenges. The pressure put on supply chains by the pandemic has increased the challenges. A transition towards more sustainable and circular value chains, where – inspired by nature-based solutions – materials are kept at their highest possible value and disconnect the use of natural resources and environmental impacts from economic activity and human well-being, can help address this challenge.[6]

The United Nations Framework Classification for Resources (UNFC) and its expanded version under development, the United Nations Resource Management System (UNRMS), can help source-critical raw materials from conventional and unconventional sources, either in multi-metal or multi-mineral deposits. UNFC’s anthropogenic resource specifications can also be used to understand phosphate resources’ social and environmental benefits recovered from sewage sludge, compost, and wastewater. UNFC and UNRMS are thus suited to increase options for quickly spreading production options between local, national, regional or global sources.

Thus, the FEW nexus approaches provide a vital consideration to improving food systems and availability where most needed, providing safe water and sanitation services, better natural resource management, and halting deforestation, strengthening recovery efforts and building the necessary resilience in the medium and longer-term while continuing progress towards the attainment of the SDGs.

The project is expected to develop and implement an innovative framework of guidelines and best practices for integrated and sustainable natural resources management within the identified nexus. The integrated and holistic approach will make much-needed progress in addressing several problems such as declining resource efficiency, increasing wastes, carbon emissions, social and environmental impacts.

2.2. Mandates, comparative advantages and link to the Programme Budget

1. United Nations Economic Commission for Europe

The project contributes to achieving the goals of fostering socio-economic prosperity and sustainable development in the pan-European region and, in doing so, it capitalizes on the comparative advantage of UNECE as a regional economic commission and as a regional intergovernmental platform for cooperation between countries and the exchange of knowledge, best practice and technical expertise in the region. The

lessons learned are preserved in several normative instruments such as standards, guidelines and best practices in food, water, sanitation, hygiene and health, energy and raw material sectors and cities. All United Nations Member States can benefit from these tools and guidelines.

The objective of UNECE Sub-programme 1, Environment[1], to which this project contributes, is to improve environmental governance and performance for safeguarding the environment and health. To deliver on this objective in the area of water and sanitation, UNECE hosts, together with the WHO/Europe, the joint secretariat of the Protocol on Water and Health, which is a legally binding agreement that brings together the environment and health sectors and supports countries in setting, implementing and monitoring intersectoral national objectives in the areas of water, sanitation, hygiene (WASH) and Health. The Protocol further strengthens the national capacity to monitor drinking-water quality and manage water-related disease outbreaks following Article 8. It promotes safe WASH services for all settings, including schools, health care facilities, and communities. Under the Protocol, environment/water and health professionals and decision-makers can benefit from a well-established pan-European convening platform and a range of tools and guidance documents developed in water, sanitation, hygiene and health. These are publicly available and can be used during the recovery phase and beyond to prepare for and prevent the possible future spread of infectious diseases while ensuring that vulnerable and marginalized groups are not left behind. Parties to the Protocol have a legal obligation to provide access to safe water for "all members of the population, especially those who suffer a disadvantage or social exclusion". To fulfil this obligation, a methodology for self-assessing current challenges that prevent governments from ensuring universal and equitable access is available under the Protocol, allowing policymakers to collect disaggregated data to identify "equity gaps" and priority areas of action. Activities on equitable access to water and sanitation can support beneficiary countries in realizing the human rights to safe drinking water and sanitation and implementing the Sustainable Development Goals while promoting inclusive COVID-19 recovery and enhanced resilience.

UNECE's Subprogramme 5 on Sustainable energy's objective, to which this subprogramme contributes, is to improve access to affordable and clean energy for all and reduce greenhouse gas emissions and the energy sector's carbon footprint in the region. To implement this, UNECE also supports the development of the United Nations Framework Classification for Resources (UNFC) and the United Nations Resource Management System (UNRMS) as tools to support the integrated management of natural resources and accelerates countries' attainment of the 2030 Agenda for Sustainable Development. The resources considered include minerals, critical raw materials, groundwater, anthropogenic resources and renewable energy. The ECOSOC Decision 2003/244 invites the Member States of the United Nations, international organizations and regional commissions to consider taking appropriate measures for ensuring universal application of UNFC.

Under Subprogramme 7 (Forests and the forest industry),[2] whose objective to which this subprogramme contributes, is to strengthen the sustainable management of forests and enhance the contribution of forests and forest products to sustainable development in the UNECE region, UNECE has extensive experience in sustainable ecosystem and landscape restoration work as well as land management and cities. In addition, under Subprogramme 8 (Housing, land management and population)[1] and its objective, to which this subprogramme contributes, which is to strengthen member State-owned programmes and policies promoting decent, adequate, affordable, energy-efficient and healthy housing for all, smart sustainable cities, sustainable urban development and land management, and to advance evidence-based population and social cohesion policies, UNECE offers a unique set of expertise and avails of a large pool of experts in land management, urban areas, ecosystems, landscape restoration, food forests and urban agriculture. In November 2022, the Joint session of the seventy-ninth session of the Economic Commission for Europe Committee on Forests and the Forest Industry and the forty-first session of the Food and Agriculture Organization European Forestry Commission, requested the Joint ECE/FAO Forestry and Timber Section to continue the work on food systems linkages with forests; including on halting deforestation, highlighting

[2] A/76/6 (Sect. 20)

synergies of forests, agricultural policies, urban/rural landscapes, and highlighting forest's role in environmental protection and ecological services and nature-based solutions.

The synergies between these respective UNECE areas of work will enable this project to build on a diverse pool of experts and experience from activities and already implemented projects. This includes, for example, work on vulnerable groups in cities particularly exposed to food deserts, greening cities and innovative approaches to food security in cities through urban and peri-urban food forests. This includes the Trees in Cities Challenge under the UNECE/FAO Joint Forestry and Timber Section is a global campaign to foster urban sustainability and resilience in a multi-disciplinary approach combining urban forestry with food forests and combating food deserts. Over 35 cities have already pledged to expand their tree cover and fruit tree planting with total commitments to plant over 12 million trees in the next 2 years. . UNECE's Housing and Land Management Unit, through its *Forum of Mayors,* has actively gathered mayors from across the UNECE region, encouraging them to sign the 2020 Geneva Declaration of Mayors, which affirms their commitment to integrate nature-based solutions and biodiversity in urban planning and reduce social inequality in cities. UNECE's has also build some experience in the area of tracing and analyzing food streams (see for example UNDA-11 project[3]). Besides, UNECE has worked with UN country offices for many years and implemented its cooperation and coordination activities with many UN partners such as UNDP, FAO and donor agencies present in these countries in project and regular work. UNECE has extensive expertise and knowledge in food and nature-based solutions for building more sustainable and resilient options in cities, and increased urban and peri-urban forestry for multi-purpose green spaces. In addition, UNECE, through its joint UNECE/FAO Forestry and Timber Section, is also a partner in the UN Decade on Ecosystem Restoration. Urban forestry and forest landscape restoration has been a core activity under the Warsaw Integrated Programme of Work 2018-2021 and will continue under the new work 2021-2025 adopted in November 2021. UNECE/FAO provides policy advice and strengthens UNECE Member States' capacities on scaling up efforts to restore degraded forests and landscapes. UNECE closely collaborates with all stakeholders and international organizations active in this area.

Other relevant subprograms of UNECE will be consulted when relevant to strengthen the impact of the project, including trade, statistics, ECI and others.

2. United Nations Economic and Social Commission for West Asia

UN-ESCWA's proposed programme budget for 2020 (A/74/6 (Sect. 22)) stipulates that the work of UN-ESCWA is guided by principles aimed at addressing socio-economic and environmental challenges that require multilateral, regional and international cooperation, including those related to transboundary issues. The strategy indicates that UN-ESCWA will help countries pursue informed climate change action to enhance climate resilience, adaptation, and global goals through localized initiatives and institutional strengthening. This will help member States improve their energy performance, diversify their energy mix, and gain better access to green technologies, climate finance, and technical tools that support integrated approaches to achieving water, energy, and food security in a changing climate.

UN-ESCWA has been since 2008 collaborating with the League of the Arab States and UN Environment to support regional work on Sustainable Consumption and Production (SCP). This has included organizing periodic Roundtable Meetings on SCP and technical meetings on green technologies for waste reduction in the Arab region, including eight Arab Mediterranean countries. Those efforts aim to encourage the utilization of approaches, tools, and policies that protect the environment, conserving natural resources while contributing to poverty eradication, particularly among women and rural communities. UN-ESCWA has also produced assessment reports on SCP in the Arab region, which have flagged that some key SCP-related SDG indicators are experiencing little or no progress at the Arab regional level and are currently going backwards.

[3] Increased policy coherence and sustainability of national production and consumption patterns in North-South and South-South agriculture trade

UN-ESCWA also looks into reinforcing the linkages between reducing food loss and waste, the efficient use of land, water and energy resources, and the overall impact on addressing climate change. This is particularly important as the linkages between food security. Climate change has not been deeply explored, except during the 23rd Conference of the Parties (COP) to the UNFCCC held in Bonn 2017 Koronivia decision was adopted. This decision, better known as the Koronivia Joint Work on Agriculture (KJWA), represents a significant step forward in the negotiations on agriculture within the United Nations Framework Convention on Climate Change (UNFCCC). It emphasizes the importance of agriculture and food security in the climate change agenda. In the Arab region, the COVID-19 pandemic is further negatively affecting food systems through higher food prices and food shortages resulting from trade and market restrictions which ESCWA estimates would lead to:

- An additional 8.3 million people are being pushed into poverty bringing the total number of poor people to 101.4 million. This will further strain social safety nets and challenge the most vulnerable.
- Pushing an additional 1.9 million people into undernourishment
- Loss of up to 1.7 million jobs in 2020 alone[7]

UN-ESCWA has closely collaborated on food security issues with FAO/RNE, the Arab Organization for Agricultural Development (AOAD), and the Arab Union of Food Industries. It can use its network of partners in this project. UN-ESCWA, through its technology centre in Amman, is also working on advancing digital technologies in the rural context.

Under Subprogramme 1 on Climate change and natural resource sustainability, the objective is to advance climate action and integrated and sustainable policies in water, energy and food security. To contribute to the objective, the subprogramme will continue to strengthen the engagement of member States and their capacities in building climate resilience by mainstreaming climate considerations in development planning and financing. It will provide technical assistance to facilitate access to science-based knowledge resources in support of informed policymaking. It will leverage existing partnerships with other United Nations entities, international financial institutions, regional organizations, and other international bodies and governments to help member states achieve various Sustainable Development Goals and their targets.

Specifically, in alignment with Goal 1, the subprogramme will analyse ways to reduce climate vulnerability in strategic sectors through diverse partnerships built under the Arab Centre for Climate Change Policies. Goal 2 will be supported by assessing the impact of climate change on agricultural productivity, ecosystems and extreme water-related climate events. Concurrently, progress against Goal 12 will be supported by promoting sustainable production and consumption patterns through more efficient use of natural resources and reducing food loss and waste. The subprogramme will also contribute towards achieving Goal 13 by strengthening resilience and adaptive capacity through integrated policy measures for pursuing adaptation and mitigation and informed human and institutional capacities.

The subprogramme also plans to strengthen institutions and provide technical assistance to member States, engage them in and provide a neutral platform for cross-sectoral dialogue, and promote and advance the identification and adoption of sustainable solutions in the areas of renewable energy, energy efficiency, water-use efficiency, food security, waste management and environmental sustainability. It will support the high-level joint technical committee for water and agriculture by implementing the Cairo declaration and reviewing and promoting the adoption of the guidelines on water allocation for the agriculture sector in the Arab States. In addition, the subprogramme will support regional reporting on and monitoring progress in achieving the Sustainable Development Goals in an integrated manner by tracking progress against Goals 2 and 7. It will also promote appropriate solutions for ensuring food security and contribute to achieving Goal 6 by fostering integrated water resources management at all levels, including transboundary water cooperation and a greater focus on groundwater resources.

The subprogramme plans to support member States on issues related to COVID-19 by assessing its continued impact and providing sectoral policy advice to Governments. Regional stakeholders focused on the response to and recovery from the pandemic, assisting Governments with building forward better and resuming their efforts to achieve Goals 2, 6, 7, 11, 12 and 13. This includes incorporating health-related considerations into sectoral assessments and technical assistance related to resilience and risks to people and the planet under the changing socioeconomic and climatic conditions for regional and national action linked to the Goals.

3. United Nations Economic and Social Commission for Asia and the Pacific

ESCAP's Environment and Development (EDD) Subprogramme 4, with the objective "to reduce the negative impacts of growth on the natural environment and to improve human well-being in urban and rural environments through building the capacity of member States to strengthen climate action and sustainable resource use, realize sustainable urban development and eliminate pollution and waste" manages a portfolio of natural resource management, ecosystems and biodiversity, sustainable consumption and production, pollution and waste management, as well as sustainable agriculture. It supports its member States through intergovernmental meetings addressing the SDGs and critical environmental priority issues in Asia and the Pacific and through capacity building, technical support, and policy-oriented knowledge products. To contribute to the objective the subprogramme employs three main approaches: circular economy -based solutions; nature-based solutions; and governance for environmental transformation.

As part of this work, ESCAP has also been promoting integrated nexus approaches for environment and development and developed specific tools for developing and implementing environmental policies across the region, including SDG 6 and the nexus between ecosystems, human health and climate change.

More recently, in support of its Member States during the COVID pandemic, EDD has focused on strengthening the capacity of Member States, including through e-learning courses and reports, on how to build back better and restore a harmonious relationship between ecosystem health and human health, using the integrated approach of planetary health. This also includes the development of a policy brief on COVID-19 and SDG 6.

Besides, ESCAP hosts, together with ECE, the United Nations Special Programme for the Economies of Central Asia (SPECA), a thematic working group on environment, water and energy.

4. United Nations Economic Commission for Africa

UNECA has also sought to support the sustainable use of natural resources in African countries through strategies such as the African Mining Vision, which provides member states with policy options and guidance to maximize the benefit of exploiting their natural resource sustainably.

The UNECA is also focused on supporting member states in building resilience to climate change, recognizing the link between the vectors of infectious disease and the degradation of habitats, deforestation and a warming climate[8].

The UNECA supports African states' economic development by identifying opportunities to create economic growth and build resilience through trade and the successful implementation of the African Continental Free Trade Agreement, including reinforcing value chains that efficiently use Africa's abundant natural resources.

The objective of UNECA Sub-programme 5 (on natural resource management), to which this project contributes, is to align African countries' natural resources management policies and strategies with the principles of the Africa Mining Vision. To deliver on this, UNECA provides technical advisory services and support to member States in the design and implementation of mineral policies and strategies aligned with the principles of the Africa Mining Vision. Using the Africa Mining Vision, ECA did assist mineral-rich African countries such as Rwanda, Ethiopia in developing their policies and strategies towards broad-based growth. More recently, it is conducting a study on Algeria's potential for value addition of its mineral resources.

Furthermore, ECA conducts policy research and provides technical support to member States on extractives-led productive linkages. These linkages can help drive economic development and diversification through direct and indirect economic benefits in the extractive industry value chain. UNECA has extensive experience in complementing this service by organising peer learning and dialogue (group meetings) on lessons learned and good practices.

Under this same subprogramme (on climate change), the objective is the attainment of common positions and the effective means of implementation of climate responses that capitalize on the continent's abundant natural resources, including its vast renewable resources (energy, water, marine and other resources) with a view to its inclusive and sustainable development. To deliver on this, ECA, first, conducts policy research and analysis to build the climate resilience of African economies, societies and ecosystems to reduce their vulnerability to disaster; and, second, broaden advisory services and technical assistance and provide training and tools to build human and institutional capacities in countries in support of policy coherence and the integrated implementation of climate actions. For example, as part of ecosystem restoration, ECA, in collaboration with the government of Ethiopia, participates in a project that seeks to support tree planting under the country's Green Legacy Initiative and contribute to the country's Climate Resilient Green Economy (CRGE) strategy. The project seeks to support tree planting and put in place institutional and management mechanisms to manage the seedlings to maturity, manage the use and off-take of the trees and tree products, and ensure equitable distribution of the benefits of the trees. Thus, restoration of degraded ecosystems to reduce surface runoff and the sustainable harvesting of the tree products to produce renewable energy.

In addition, under Subprogramme 2 on Trade, this subprogramme contributes. The objective is for African countries to implement their respective African Continental Free Trade Area strategies. To deliver on this, ECA is engaged in providing advisory services and training for member States' negotiators on the Agreement Establishing the African Continental Free Trade Area to equip them with up-to-date knowledge of policies in the areas of regional and continental competition investment and intellectual property. UNECA closely collaborates to continue to work with the African Union Commission, the resident coordinator offices and UNCTAD, and also with development partners, to support member States in securing market access and business opportunities from the African Continental Free Trade Area while minimizing any potential adverse effects (import surges, dumping, customs revenue loss risks) in the context of the agendas of the African Union, regional economic communities and World Trade Organization (WTO)-related and other multilateral and bilateral trade issues such as regional trade protocols, the African Growth and Opportunity Act and economic partnership agreements.

5. United Nations Environmental Programme

UNEP has long-standing experience in applying the value chain approach. The eco-innovation methodology is one of the tools that UNEP has developed and tested in different regions and with companies of different sizes (focusing on SMEs in developing countries). Eco-innovation is developing and applying a business model that incorporates sustainability throughout all business operations based on life cycle thinking and cooperation with partners across the value chain. Eco-innovation entails a coordinated set of modifications or novel solutions to products (goods/services), processes, market approach, and organizational structure, leading to enhanced performance and competitiveness.

Thinking from a life cycle perspective means considering all life cycle phases, from raw materials extraction through material processing, manufacturing, distribution, use, repair and maintenance to disposal or reuse. This approach allows companies to evaluate where significant progress can be made against the industry's major challenges, anticipate and avoid future ones. Adopting this perspective works best in cooperation with suppliers, customers and other partners across the value chain. Eco-innovation helps companies access new and expanding markets, increase profitability along the value chain, stay ahead of standards and regulations and increase productivity and technical capacity while attracting investors.

In partnership with the Resource Efficient and Cleaner Production Network (RECPnet), UNEP has supported SMEs in building more resilient value chains by adding sustainability at the core of their business strategy: 1) By working on joint sustainable solutions to common problems, significant shared gains can be achieved with better commercial, environmental and social value. 2) Greater material or production efficiency, minimized waste, optimization of distribution channels and reduced lead-time result in lower production costs. 3) Good relationships built through a value chain approach helps develop proactive communication on emerging challenges and risks to adapt. 4) Producers that rely less upon or not exclusively on import supplies (e.g., sourcing certain materials locally or through on-site recycling) are less prone to the crisis.

At the same time, UNEP's value chain approach helps countries, industry and other actors to understand "hotspots" generating the most significant impacts and thus identify critical products, life cycle stages, pathways, geographical locations, etc. This holistic view ensures that no risks are encountered through burden-shifting. Trade-offs are well known, particularly in a pandemic situation and in the recovery and rebuilding phase.

This project contributes currently to UNEP's sub-programme 6 (resource efficiency). Looking forward, the UNEP mid-term strategy 2022-2025 develops responses. It deploys solutions that aspire to achieve three interlinked and mutually reinforcing strategic objectives: (a) "Climate stability", where net-zero greenhouse gas emissions and resilience in the face of climate change are achieved; (b) "Living in harmony with nature" (SCBD, 2010), where humanity prospers in harmony with nature; (c) "Towards a pollution-free planet", where pollution is prevented and controlled and good environmental quality and improved health and well-being are ensured for all. The project can contribute to all three of these pillars, as eco-innovation holistically identifies sustainability impacts and proposes actions for SMEs to address these through new business models. A particular contribution to objective (c) is expected.

6. United Nations University - Institute for Water, Environment and Health

UNU-INWEH is an integral part of the United Nations University (UNU) – an academic arm of the UN, including 14 institutes and programmes located in 12 countries worldwide dealing with various development issues. Established in 1996, UNU-INWEH's mandate is to help resolve pressing water challenges that are of concern to the United Nations, its Member States, and their people, through critical analysis and synthesis of existing bodies of scientific discovery; targeted research that identifies emerging policy issues; application of on-the-ground scalable science-based solutions to water issues; and global outreach. UNU-INWEH carries out its work in cooperation with the network of other research institutions, international organizations and individual scholars throughout the world.

UNU-INWEH has led the SDG 6 Policy Support System, SDG-PSS (https://sdgpss.net/en/), a tool to support policy and decision making to achieve SDG 6 under data-poor conditions. The tool enables cross-sectorial evidence-based collaboration between decision-makers and professionals. It promotes the strengthening of the enabling environment to achieve SDG 6. SDG-PSS is currently available online in English, French and Spanish and is used in more than 35 countries worldwide. The tool can be adapted to a full context and scaled up to other SDGs.

7. World Health Organization Regional Office for Europe

The World Health Organization (WHO) is a specialized agency of the United Nations with 194 Member States. The primary role of the WHO is to direct and coordinate international health within the United Nations system. WHO fulfils its objectives through its core functions: providing leadership on matters critical to the health and engaging in partnerships where joint action is needed; shaping the research agenda and stimulating the generation, translation and dissemination of valuable knowledge; setting norms and standards and promoting and monitoring their implementation; articulating ethical and evidence-based policy options; providing technical support, catalyzing change, and building sustainable institutional capacity; and monitoring the health

situation and assessing health trends.

The WHO Regional Office for Europe (WHO/Europe) is one of WHO's six regional offices worldwide. It serves the WHO European Region, which comprises 53 countries. The WHO European Centre for Environment and Health (ECEH) is part of the Regional Office. Within ECEH, the Water and Climate Programme (WAC) provides leadership and the Regional Office's capacity for water, sanitation, hygiene, and health. It advises the Member States concerning strengthening their capacities in developing and implementing policies, strategies, and tools aligned with the strategic directions enshrined in WHA resolutions 61.19 and 64.24 on WASH and health, 72.2 on WASH in health care facilities and 73.1 on COVID-19 response, as well as SDGs 3 and 6 and the 2017 Ostrava Declaration on Environment and Health. WHO ECEH, together with UNECE, provides the secretariat function to the Protocol on Water and Health (see above for further details). Under its mandate, WHO ECEH leads regional work on preventing water-related disease, including outbreak response; health and environmental water surveillance; safely managed and climate-resilient water and sanitation services; and the provision of WASH services in health care facilities and schools, based on the relevant WHO guidelines and standards established in the domain of water, sanitation, hygiene and health (including the WHO Guidelines for Drinking-water Quality and the WHO Guidelines on Sanitation and Health).

2.3. Country demand and target countries

The beneficiary countries are Albania/Montenegro, Belarus, Kazakhstan, Uzbekistan, Iraq, Algeria, Nigeria, and Namibia. While some countries have already recognized the importance of this integrated FEW approach and have started to reorganize food, water, energy, and related sectors under a mega ministry of natural resources' competency. Country demand stems from the implementing partners' overall activities in these countries and is in line or follows regular mandated and previous project work. Upon request the country demand will be submitted to DESA. The innovative approach of integrated resource management, stemming from lessons learned on FEW management for over half a century, shows promising results in countries where this approach was adopted. Sustainable and integrated management has improved the circular economy's progress and reduced waste and pollution, which hitherto has only less than 10 per cent success. However, this approach needs broader adoption in many other countries, especially in Eastern Europe, Western Balkans and the arid regions of Central Asia, the Middle East and Africa.

The project is expected to develop and implement an innovative framework of guidelines and best practices for integrated and sustainable natural resources management such as food, water, energy and raw materials. The integrated and holistic approach will make much-needed progress in fixing declining resource efficiency, increasing wastes, carbon emissions, social and environmental impacts. The framework, guidelines and the ideas developed and tested by the project could be adopted and scaled up by other significant initiatives such as the Clean Climate Fund and Global Environmental Facility.

Under the project, activities will be focused on the UNECE, ESCAP, ECA and ESCWA regions. The project will ensure the dissemination of the results among all regions. The project will provide specific national support for preparing analyses, workshops, and action plans to help the countries implement integrated approaches in all three areas.

The target countries are in different sub-regions. Additional countries will be included in dissemination and workshop activities and others based upon availability of funds and in the regional workshop. Target groups will be the national and municipal policymakers, experts, and academia from beneficiary countries, emphasizing women and youth in all selected countries. This will ensure the direct impact of the measures and their cross-cutting implementation at the country and inter-regional level

The beneficiaries are selected based on social, environmental and economic challenges related to food-water-energy issues. The criteria include water and land stress, challenges with water and sanitation services, issues related to the green energy transition and the greening of food availability for all (particularly in cities) challenges. The selection of the 8 pilot countries is demand-driven and based on the following criteria: 1) project topic is identified as a priority of the country or region; 2) firm commitment of the national government to the project topic; and 3) geographical balance. On request and depending on the availability of resources (also from other donors), additional follow-up and support activities will be held on a national level. The management team is confident that the project will deliver impact to all 8 beneficiary countries.

2.4. Link to the SDGs

As the effects of the COVID-19 pandemic spread worldwide, 2020 marked the beginning of the Decade of Action (UN, 2020) – the last ten years to deliver on the Agenda 2030 for Sustainable Development. The global leaders have pledged to mobilize financial resources, enhance national implementation and strengthen institutions to achieve all Sustainable Development Goals (SDGs) by 2030, leaving no one behind. Nevertheless, the pandemic will likely have profound but adverse effects on implementing the 2030 Agenda for Sustainable Development (UN, 2020). The limited financial and human resources in less developed countries might be absorbed by the response to the health emergency and diverted away from achieving SDGs. A prolonged global economic slowdown might impact international funding for projects on sustainable development, especially in areas on the protection of the people and the society.

This project is expected to contribute to the attainment of SDG 2, 3, 6, 7 and 12, especially the following specific targets:

- 2.1 By 2030, end hunger and ensure access by all people, particularly the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round.
- 3.3 By 2030 (…) combat (…) water-borne diseases and other communicable diseases
- 3.8 Achieve access to quality essential healthcare services (…)
- 3.9 By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination
- 3.d Strengthen the capacity of all countries, particularly developing countries, for early warning, risk reduction and management of national and global health risks.
- 6.1 By 2030, achieve universal and equitable access to safe and affordable drinking water for all
- 6.2 By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying particular attention to the needs of women and girls and those in vulnerable situations
- 7.1 By 2030, ensure universal access to affordable, reliable and modern energy services
- 11.6: Reduce the environmental impacts of cities
- 11.7: Provide access to safe and inclusive green and public spaces
- 12.2 By 2030, achieve the sustainable management and efficient use of natural resources
- 12.3 By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses
- 12.5 By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse
- 12.8 By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature
- 12.a Support developing countries to strengthen their scientific and technological capacity to move towards more sustainable patterns of consumption and production
- 15.1 By 2030 ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line

with obligations under international agreements

- 15.2 By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally

The project will contribute to progress under SDG 2.1 by improving food security, the availability of and access to food in general, particularly of the most vulnerable parts of the population including women, youth, and the elderly. This is achieved through innovative tools, better situation analysis, and nature-based solutions to fill the current vacuum in food resilience, particularly in the urban environment. The project will contribute to SDG 11.6, 11.7 as well as 15.1, 15.2 by integrating food systems with sustainable (urban) forestry as an integrative and cost-effective nature-based solution that can help to develop greener, more sustainable, and resilient cities by providing vital benefits for food, health, wellbeing, climate adaptation, biodiversity, and disaster risk reduction. The project also targets SDG 12, and Target 12.3, to reduce per capita global food waste by half at retail and consumer levels by 2030. With the analysis of online food marketing platforms to enhance agricultural products marketing , the amount of loss and waste can be prevented and redistributed. In addition, using currently lost production also supports SDG 12 target 12.5 and helps sustainably reduce waste in the coming years.

For its water, sanitation, hygiene and health component, the project will play a substantial role in realizing SDG targets 6.1 and 6.2. Activities will include the development of a specific methodology to assess the equity of access to water and sanitation in the context of COVID-19 or other water-related epidemics, which will enable governments to obtain good quality information, including concerning the situation of vulnerable and marginalized groups and to the affordability of services. This is the first step towards developing informed policy frameworks that will ensure universal, equitable and affordable access to drinking water and adequate sanitation for all. Furthermore, activities will focus on strengthening WASH services in schools and health care facilities, which are critical settings of epidemiological importance. By reinforcing WASH in these institutions under the calls of SDG6, countries also strengthen their capacity to prevent and reduce water-borne diseases, to manage public health risks (thereby contributing to SDG targets 3.3 and 3.d) and to improve access to quality health care services (thereby contributing to SDG target 3.8).

Special attention will be given to all the activities mentioned above to the needs of women and girls, with co-benefits for the attainment of SDG5.

The project will contribute directly to SDG 7.1 in ensuring universal access to affordable, reliable and modern energy services. The project will look into the availability of critical raw materials required for sustainable energy and the possibilities of a nexus approach in integrating hydro-energy and bioenergy from agricultural wastes.

The nexus approach will contribute directly to SDG 12.2, 12.3 and 12.5 in achieving the sustainable management and efficient use of natural resources; substantially reducing global food waste; and reducing waste generation in general through prevention, reduction, recycling and reuse.

2.5. Lessons learned

The 2030 Agenda, with its 17 Sustainable Development Goals, provides an ambitious and comprehensive framework that opens new policymaking and international cooperation perspectives. While progress in its implementation is being made, recent statistical reports show that current efforts are far below the scale needed to deliver the SDGs by the end of this decade.

In previous projects, the links between these three areas had not been in focus. In the food area, for example, a particular lesson learnt from previous project work and regular work was the need for more inclusive approaches to consider the entire food system and its environmental impact at national but also localized levels. While focused interventions in this area via project and regular work might have impacted one sector and changed matters, the related ones (water, sanitation, energy) were neither considered or when considered, then only marginally. Broader changes were therefore limited by this focalized approach.

Furthermore, in some of its specific components, the project incorporates past lessons learned. It is in keeping with previous project work at the national and regional levels. For instance, in WASH, activities on equitable access to water and sanitation have been carried out by 12 countries of the pan-European region under the Protocol on Water and Health. UNECE has compiled related findings and experience in a dedicated publication. [4] This offers a valuable framework for the project to build on. Project activities will also take place alongside the implementation of other activities on the water, sanitation, hygiene and health foreseen under the Protocol's programme of work, which is in line with the project's objectives. This will allow for synergies between complementary and/or mutually reinforcing work.

Overall, the regions' challenges cut across most SDGs: environmental pressures persist; sustainable economic development requires further advances in connectivity; growing urbanization demands increased attention and new solutions to cities' problems, and effective policies and inclusive dialogue cannot take place without robust data and monitoring mechanisms. Faced with the COVID-19 pandemic, accelerating progress is even more urgent: the SDGs provide a roadmap for a recovery that leads to a greener, more inclusive and resilient economies.

UN tools and expertise cover the complete chain of production, consumption and recovery of many natural resources – from classification to support for their protection and sustainable use. Comprehensive policy support, norms and standards provide practical means to help countries decouple economic growth from environmental degradation and shift to more efficient, cleaner and circular economies.

A UNECE report (2021) calls for adopting a "nexus" approach to identify and promote integrated planning, management, and governance of natural resources across sectors and spatial scales to achieve the SDGs[5].

2.6. Innovative aspects

The project is innovative in that it uses a scale-independent approach (applicable at local, national and regional levels) to identify a nexus pathway in various regions, primarily based on experiences with food, water, and energy-related nexus activities carried out by the UN agencies. The nexus pathway approach is rarely applied to projects and their implementation work and, even rarer, applied at the three levels of national governance. The consistent use of the nexus pathways through a process anchored in a multi-stakeholder dialogue, is innovative and allows to propose actions and measures based on identified nexus challenges and intersectoral linkages, and to evaluate how they have been addressed. Various UN tools can be applied in different stages.

The nexus approach of linking water, food and energy remains a method still rarely used in an integrated and consistent manner. The innovative aspect of this nexus stems also from the angle taken at the intersections between sectors commonly seen apart in policy but also in research and business. It includes governance,

[4] See "The Human Rights to water and sanitation in practice: Findings and lessons learned from the work on equitable access to water and sanitation under the Protocol on Water and Health in the pan-European region", available here

[5] UNECE (2021) Natural Resource Nexuses in the ECE region https://unece.org/info/Sustainable-Energy/UNFC-and-Sustainable-Resource-Management/pub/355180

planning, management; socio-economic development and infrastructure angles where synergies are rarely explored. The consistent use of the food-water-energy nexus pathway and considering it as one complex system is not only new but will possibly lead to new conclusions. In practice, only some countries (not including the beneficiary countries) have already recognized the importance of this integrated nexus approach and have started to reorganize food, water, energy, and related sectors. This said it remains a way of doing things differently. The innovative approach of integrated resource management, stemming from lessons learned on FEW management for over half a century, shows promising results in countries where this approach was adopted. Sustainable and integrated management has improved the circular economy's progress and reduced waste and pollution, which hitherto has only less than 10 per cent success. However, this approach needs broader adoption in many other countries, especially in the arid regions of Central Asia, the Middle East and Africa.

The project aims to introduce stakeholders in the beneficiary countries to this new way of managing natural resources more sustainably and provide them with practical tools to implement nexus-based approaches.

3. ANALYSIS

3.1. Situation analysis

The 2030 Agenda for Sustainable Development, with its seventeen Sustainable Development Goals (SDGs), provides an ambitious and comprehensive framework that opens new perspectives for policymaking and international cooperation. While its implementation is being made, current efforts are far below the scale needed to deliver the SDGs within the next ten years. Ambitious action becomes even more critical in the context of the response to the COVID-19 pandemic: the SDGs are vital for a recovery that leads to greener, more inclusive economies and more robust, more resilient countries.

Balancing the food-water-energy-raw material supply and use has more profound implications than usually appreciated. Even a slight imbalance in one aspect of this essential triangle can have substantial unintended implications for societies. The rise and fall of human settlements from pre-historic times are intimately related to these three variables. There are several current examples where total societal breakdown and intense strife have resulted from an imbalance created by food, water, energy or raw material security. The three pillars of peace and security, development and human rights in society have essential linkages to balanced food production, energy/raw material security and water availability.

Uninterrupted provisioning of food, water and energy are essential for the socio-economic development and attainment of SDGs in all the beneficiary countries. Energy production is intimately related to mining which has a significant impact on underground and surface water resources. Water is a source of energy in hydropower, which is also an option for energy storage. The availability and supply of water for food production or domestic consumption requires energy. There is a robust food-water-energy nexus that is well understood. Both are resources that need to be nurtured, utilized, conserved and protected with the right intentions of sustainable development. However, finding the proper balance in energy and water resource management has become a significant challenge in many countries.

While recognizing that energy and water are direct and essential inputs to food production, it is seen that there is a lack in beneficiary countries to have the required capability to develop policy recommendations and an action plan for integrated energy and water resources management while also ensuring access to essential services and adequate WASH conditions. A part of this difficulty stems from a lack of knowledge or understanding of international standards and management frameworks for the balanced development of natural resources. Because of the absence of an overarching framework, the beneficiary countries cannot

collect consistent, coherent and reliable data related to energy, water resources, and access to essential services. This has led to gaps in evidence-based policies and strategies for integrated management of water and energy resources. Moreover, the lack of standards is acutely evident in focusing on process rather than actual results of developmental programmes related to energy and water management.

Building on existing capabilities and resources is also necessary for responding to country situations such as those mentioned above. The identified beneficiary countries have significant natural resource potential utilized to maximize economic and social returns. The proceeds from agriculture, energy and mineral resources continue to provide the necessary revenue that has been channelled for overall socio-economic development, especially in areas such as health, education and women welfare. While drawing upon these strengths, it is essential to see how capacities could be strengthened for integrated development, rather than a fragmented approach expected in the beneficiary countries.

Food resource management:

To feed the 9 billion people expected to live on the planet in 2050, food production would have to increase by more than 50 per cent, and food loss and waste have to be reduced by 20 to 40 per cent. The situation is even more aggravated by the growing urbanization and the increased needs of city dwellers in all regions covered by the project. While food security has improved substantially in the beneficiary countries over the past two decades, recent estimates suggest a low crisis-resilience and large sections of the population are exposed to a severe form of food insecurity.

In addition, the agricultural sector is one of the primary land users, shaping and changing landscapes throughout the regions with significant sub-regional variations. These issues are exacerbated by several million tons of food being wasted annually. However, from an economic perspective, the agricultural sector creates value-added and employment.

Water, sanitation and health:

Even though most countries have sufficient water resources, access to water and sanitation is often inequitable, with significant gaps between urban and rural populations and particular barriers faced by vulnerable and marginalized groups. The lack of access to safe and adequate WASH services in schools and healthcare facilities has also been recognized as a significant problem across countries in the region, hampering favourable health, well-being and educational outcomes. Furthermore, increasing consumption and pollution stress the aquifers and surface water systems. Large populations, especially in rural areas, lack access to good quality drinking water. Agricultural run-off and mining wastes are polluting the river systems in many countries. Proper management of mining impacts on water bodies is necessary to conserve and rejuvenate the water systems in many countries.

In most countries, climate change is a grave imminent threat to water resources. Many glaciers that are the water supply sources are under retreat, which has reduced water flow in river systems. Additionally, increased use for agriculture and damming for hydropower projects is also creating an impact. Dams degrade the downstream riverine systems by increased side bank erosion and have impacts like water acidification.

Energy/raw material resource management:

The current energy mix of the target countries is dominated by fossil fuels in all countries. All the countries expect significant growth in the future, yet have only modest per capita electricity consumption among non-OECD countries. The energy demand is therefore expected to grow as urbanization progresses in these

countries. To balance the energy fuel imports and assure energy security is a significant challenge in most countries. Reducing dependence on fossil fuels, especially coal and lignite, is a significant problem. Increasing the contribution of hydropower will be keenly sought in most countries in their quest for an optimal energy mix that considers a balance between energy security, environmental impacts, including reducing the carbon footprint.

All the countries significantly contribute to the GDP from mineral-based industries, including energy (coal, oil and natural gas) and non-energy materials (base metals, phosphates, limestone, etc.). In some countries, mining is a source of considerable export revenue. Significant levels of industrial employment are generated from the mining industry. The outlook in all the countries shows increased mining activities, especially coal, petroleum and natural gas.

Mining will be accompanied by significant environmental impacts in the absence of long-term planning and management. Current mining patterns significantly reduce productivity as readily available resources are exhausted, and grades are lowered. This also causes an exponential increase in the mining footprint, wastes generated and growth in the land, water and material resources consumed. Due to efficiency losses, mining impacts the environment more, especially in water pollution, acid mine drainage and other waste issues. With increasing population pressures, mining projects conflict with other land uses such as agriculture and city development.

Recent years saw a massive downturn in mineral commodity prices, which was exacerbated by the Covid crises. This has introduced considerable stress in the mining dependent economies and in the profitability of companies and projects. Many mining centres had to reduce production, lay off employees and cut costs in various ways. Safety and environmental controls, which have had a significant impact on the costs in recent years, are usually threatened by cost-cutting measures. In some extreme cases, mining projects were abandoned without proper remediation. Unattended wastes were lying around, and public exchequers, which were already impacted by reduced revenues, saw additional burden thrust on them for cleaning up abandoned sites.

This had made the public very hostile to mining projects. As the countries are under pressure to increase mine production, the low commodity prices have become a reality. The old paradigm of mineral rents based on the low unit cost of production and high commodity prices is no longer valid. Rent sharing in the form of royalties and cooperative profit sharing is becoming more and more disputed today. The industry's increased underperformance due to declining grades and challenging mining situations added to the market pressures has made mining a questionable activity everywhere. United Nations Framework Classification of Resources (UNFC) and the United Nations Resource Management System (UNRMS) provide the framework for the sustainable and integrated management of natural resources.

Interdependencies:

There is a need to integrate food-water-energy provisioning policies in target countries based on international best practices and local realities and improve them based on shared experience. While increased demand for food-water-energy is foreseen in all countries, policies are not usually fully aligned to balance the new environmental and technological realities.

Improved integration of food-water-energy management policies and practices are necessary. While there should be a thrust for further development of agriculture and energy projects, there should be a full appreciation of the country's water resources impacts, including access to essential services and provision of adequate WASH conditions for the prevention and control of the disease. Groundwater resources are a

category of their own, which needs to be defined and managed sustainably as an energy resource.

The development of energy resources could impact the availability of underground water resources, which should be figured in throughout the life cycle of a mining project. This could stem from the necessary use of fresh water in the production of petroleum or minerals, the pollution of groundwater aquifers and contamination of freshwater sources due to mine wastewater run-offs. Although the complete recycling of water used in the petroleum and mineral production cycle has been demonstrated successfully in many countries has not been fully adopted everywhere.

The impact of energy on water resources become acute when new sources of energy are found and developed. There is a thrust in the target countries to develop shale gas as an alternative source of energy. However, the production of shale gas requires large quantities of freshwater. The backflow from such operations could contaminate local groundwater as well as surface water sources. A similar caution could also apply to the development of green technologies like wind power or solar energy. All these technologies require large quantities of critical materials like rare-earth elements, cadmium and lithium, which will impact water resources. Solar photovoltaic panels require large amounts of freshwater for cleaning the dust that settles on them and thus reduces their efficiencies. Concentrated solar power can raise local temperatures that disturb the water balance in the locations lower of the water tables. Lowering of the water tables and aggravated loss of soil moisture could be caused by such projects.

The interdependencies of food, water and energy resources are therefore well understood and demonstrated. However, the problems are so complex that there has been difficulty finding a common approach to finding and implementing appropriate solutions. Clearly, there is a need to differentiate the approach for tackling resource management into two: the structure and the content. The structure of a natural resource entity (food, water or energy) is the standard framework or logic that can define it in a universally understandable manner. The content, or in other words, the superstructure, are the unique factors that are associated with a particular resource entity.

The underlying issues in the target countries can be summarized as:

1. Lack of coherent and systematic approach to the sustainable development of food-water-energy resources;
2. Lack of planning and long-term vision in the management of natural resources; and
3. Lack of holistic approach to understanding and managing the food-energy-water dependencies while considering the need to provide reliable and adequate essential services.

These sectors have historically excluded women, which is now progressively changing worldwide. Food, energy and good quality water access are more important for women, children, youth and other vulnerable groups in both, the urban and the rural setting. The availability of clean energy can improve the health and well-being of women and children. Many groups of the rural populations still depend on unhealthy biomass use for cooking. Availability of clean water is an issue mainly with the disadvantaged sections of rural society. Better access to water improves life expectancy in children. It provides the overall well-being of women and other disadvantaged sections of society.

3.2. Country-level situation analysis

This section provides a detailed analysis of the challenges faced at the national level along with the three clusters of the project (food-water-energy). While activities in beneficiary countries will always include a nexus component, in keeping with the project's objectives, the situation in some countries may warrant a specific focus on one of the components of the project. Whenever this is

the case, it is specified next to the target country. During the project and considering the specific national circumstances, synergies will be built with other components.

Country	Status of affairs	Realistic outcomes (should be grounded in the outcomes in the results framework in section 4.2)
Albania (focus on the water and health component)	**Specific challenges on water and sanitation**: In 2019, Albania reported under the UNECE-WHO/Europe Protocol on Water and Health that access to drinking water is only about 58% in rural areas, while access to sanitation is 52% at a country level and only 15% in rural areas[6]. This indicates problematic gaps in access to water and sanitation, which, as demonstrated by the COVID-19 pandemic, can have wide-ranging implications for the prevention and control of infectious diseases. In addition, the country is lagging behind with wastewater treatment. The country has also reported in 2019 that the equity of access to safe drinking water and sanitation has not been assessed, meaning that there is a risk that the most vulnerable and marginalized groups are those left without access and are at most significant risk of being hit by the current pandemic as well as future infectious diseases. **Work already undertaken and "assets" of the country**: Albania has several national strategic objectives in water, sanitation, and health, including expanding and improving the quality of water supply and sanitation services[7] . Currently, the country is being engaged under the Protocol on Water and Health in refining such national objectives, which could constitute an excellent working ground for the project.	- Pilot methodology on equitable access to water and sanitation is applied, resulting in a national/regional or local "map" of existing inequities. This will be the first step for follow-up action, including the development of equity-sensitive policy frameworks. - Albania has taken part in knowledge sharing activities on actions taken by the governments in the area of water, sanitation, hygiene and health in the

[6] National summary report submitted under the Protocol in 2019, available here
[7] Ibid

	In addition, Albania is a Party to the UNECE-WHO/Europe Protocol on Water and Health, so this is expected to enhance the sustainability and durability of project results and to offer a long-term framework for monitoring impacts even beyond the project duration. **Relevant consideration based on VNR**: Albania's VNRs explain that the SDG era started in the country with a strong focus on the eradication of extreme poverty and reducing the risk of social exclusion. The 2018 VNR further highlights that leaving no one behind and tackling social exclusion remains a key pillar of Albania's people cantered approach to the implementation of SDGs. The strong equity component of the project in the area of water, sanitation, hygiene and health thus resonates with this country priority and, through the project's activities, Albania will achieve more equitable access to essential services for all sections of the population, including those suffering disadvantage and social exclusion. Furthermore, the country made it clear in its 2018 VNR that accession to the EU is an overarching priority and one of the most important strategic ambitions for Albania. In the area of water, the recast of the EU Drinking Water Directive was recently adopted in 2021 and places a special emphasis on access to water, including for vulnerable and marginalized groups. The tools on equitable access available under the Protocol are explicitly mentioned in the Directive as possible guidance for EU MS to implement the Directive. Therefore, also from this point of view, the project's activities on water, sanitation and health (which rely on the use of such tools) will be relevant for Albania and in line with its objectives of implementing EU legislation and pushing forward its accession agenda.	context of COVID-19 or other epidemics and has reported related progress under the framework of the Protocol on Water and Health .
Belarus (focus on the water and health component)	**Specific challenges on water and sanitation in institutions:** There is a substantial data gap on WASH in health care facilities in the pan-European region, including in Belarus. This has important consequences, as it means that it is difficult for the relevant authorities to detect challenges and adopt targeted follow-up action, potentially compromising good-quality health care for the population and entailing a concrete risk for the spread of infectious diseases.	- Improved knowledge base on the situation with WASH services in health care facilities through a comprehensive and systematic assessment. This will have a long-

	World Health Assembly resolution 72.7 on WASH in health care facilities calls for strengthening national monitoring and policy frameworks. **Work already undertaken**: In 2021, Belarus has completed the revision of its national targets for water, sanitation, hygiene, and health under the UNECE-WHO/Europe Protocol to align with the Sustainable Development Goals. The government has identified as a priority providing the population with high-quality water and sanitation services, including in institutions. Concrete activities were identified to give effect to this objective, including the provision of WASH services in health care facilities, also following WHA resolution 72.2 In this context, Belarus has expressed high interest in improving the evidence base on WASH conditions in healthcare facilities and being supported in these efforts by the WHO/Europe part of the joint secretariat of the Protocol. "**Assets**": Belarus is a Party to the UNECE-WHO/Europe Protocol on Water and Health and this is expected to enhance the sustainability and durability of project results **Relevant consideration based on VNR**: In its 2017 VNR (2022 VNR forthcoming), Belarus indicated enhancing the management of water supply and sanitation systems and ensuring uninterrupted supply of the population with high-quality drinking water and as its key national priority, with the objective to cover 100% of population with high-quality drinking water supply, which implies effectively reaching out to disadvantaged and vulnerable population groups. The country is also considering water-energy nexus by intending introduction of energy-saving technologies in the field of water management.	lasting impact by strengthening monitoring capacity in the beneficiary country and informing targeted interventions towards improving prevailing conditions. - Detailed analysis of the policy and legal environment with respect to WASH in health care facilities, allowing for the possible detection of areas of improvement. This will be the first step for tailored follow-up action Overall benefit: strengthening resilience against future epidemics, guaranteeing quality health care to the population, and preventing environmental contamination.
Montenegro (focus on the water and health component)	**Specific challenges on water and sanitation and work already undertaken by the country:** Montenegro is a recent Party to the Protocol and, when acceding to this instrument in 2019, it has indicated that it aims to tackle challenges such as	- Pilot methodology on equitable access to water and sanitation is

	climate change, water scarcity and ensuring universal and equitable access for all and in all settings.[8] The country is currently in the process of developing a baseline analysis on water, sanitation, hygiene and health, in order to define concrete objectives in these areas under the Protocol. These objectives will be adopted at the highest possible level by the government. One of these objectives, according to the provisional draft, is to assess the situation with equitable access to water and sanitation, which would enable the country to acquire a better knowledge of existing access gaps, including for vulnerable and marginalized groups. The country has expressed interest in related activities and is supported by the UNECE secretariat of the Protocol. "**Assets**": Montenegro is a Party to the UNECE-WHO/Europe Protocol on Water and Health, so this is expected to enhance the sustainability and durability of project results. **Relevant consideration based on VNRs**: In its 2016 VNR, Montenegro highlighted a set of development challenges, including possible limited availability of natural resources which, together with qualitative and quantitative degradation, may compromise access to essential services for future generations and opportunities for development. In this light and also considering more recent references to water scarcity as a challenge for the country (see above), it is considered that the project activities can bring a concrete contribution towards strengthening Montenegro's capacity to sustainably manage water resources while ensuring equitable access to water, sanitation and hygiene. As a new VNR is due for Montenegro in 2022, the project will also consider water, sanitation and health-related challenges presented by the country	applied, resulting in a national/regional or local "map" of existing inequities. This will be the first step for follow-up action, including the development of equity-sensitive policy frameworks. - Montenegro has taken part in knowledge sharing activities on actions taken by the governments in the area of water, sanitation, hygiene and health in the context of COVID-19 or other epidemics and has reported related progress under the framework of the Protocol on Water and Health. .

[8] Statement by the Minister of Health of Montenegro, H.E. Mr. Kenan Hrapović, at the fifth session of the Meeting of the Parties to the Protocol (Belgrade, 19-21 November 2019)

	in such document, seeking to further align its activities with country priorities as much as possible.	
Uzbekistan	Uzbekistan is committed to implementing the 2030 Agenda for Sustainable Development. In 2018, 16 national Sustainable Development Goals (SDGs) and 125 corresponding targets were adopted. Simultaneously, an inter-agency Coordination Council for implementing the national SDG Roadmap was established. Uzbekistan is implementing structural reforms to strengthen the market economy, alongside currency and tax reforms, and systemic agricultural reforms (SDG2). A range of measures have been taken to improve the business climate, stimulate entrepreneurship and formal employment, including among youth and women (SDG5 and SDG8), as well as to attract investment and promote innovation (SDG9). Uzbekistan has initiated many vital reforms in the past years. It thrives on tackling many other countries most pressing environmental and production problems. In the past years, at local and city levels, efforts were made to improve food availability to city dwellers and ensure their safe access to clean water and energy. The pandemic and the lack of multi-disciplinary approaches to some of the country's most pressing national and urban-level problems require urgent attention. Uzbekistan has substantial natural resources, which include more than 1,700 mineral deposits, which includes several critical raw materials. In the past several years, Uzbekistan has intensified its efforts to grow the country's industry, including manufacturing and, especially, automobile production, chemical production, construction products, and machine building. Nexus approaches are in a nascent stage. The country continues to be committed to improving its approaches to its most pressing problems linked to the management, production and consumption of natural resources. VNR for Uzbekistan: The VNR highlights the challenges faced by the country in the areas of food	The COVID-19 pandemic threatens to slow down Uzbekistan's progress on the SDGs. Officials in the country – also at city levels have increased capacity to analyze how they can use a multi-disciplinary approaches to several pressing health, food, water and energy problems and have initiated the implementation of measures on sustainable production and consumption patterns of natural resources developed within this project, to increase synergies among the sectors and adverse environmental effects. Efforts are also underway to develop green cities and nature-based solutions. The project will support Uzbekistan in

	security, sustainable cities, pure water and sanitation as well as sustainable energy, all of them exacerbated by the impact of the Covid-19 pandemic	response in rebuilding the economy post-Covid 2019. This will lead to increased availability of natural resources and food through nature-based solutions with a focus on green cities mindful of the country's landscape restoration efforts.
Kazakhstan	Total primary energy supply from Coal 45.9 per cent, Oil 22.1 per cent, Gas 31.1 per cent, Hydro 0.8 per cent and Other Sources 0.1 per cent. The total electricity generated per annum is 94.6 TWh. Per capita, the electricity consumption of 3,889 kWh (19/108 in Non-OECD countries) has grown ~ 2.4 per cent annually in the last 5 years. World's leading uranium producer providing about 40 per cent of the world production. The mineral industry accounted for a significant share of the country's gross domestic product (GDP) and export revenue; petroleum and natural gas were the leading commodities regarding production value. Mining activities are estimated at $70 billion annually. Interest in Kazakhstan's mineral industry will likely continue to increase along with an increase in the number of projects aimed at exploiting the country's significant mineral resources. Kazakhstan has limited renewable water resources. This may become a severe limiting factor for developing Kazakhstan's rich natural resources, economy, and sustainable development. The probable and explored ground water reserves in Kazakhstan are estimated to be 45 km3 per annum or 1,450 m3 /sec. The proven reserves comprise 16.04 km3 or 468 m3 /sec. Some of Kazakhstan's water supply has been polluted by industrial and agricultural run-off. The Aral Sea, which is shared with Uzbekistan, has shrunk to three separate bodies of water	National sustainable energy, mineral and water resources management framework. Assessment of food loss, energy and mineral resources using UN instruments in selected areas; Assessment of the impact of mining on water resources in selected areas; Assessment of groundwater resources using UN tools in selected areas. Increased availability of clean and affordable energy

	because of water drawdowns in its tributary rivers. The Aral Sea's water surface reduction has exacerbated regional climatic extremes. Agricultural soil has been damaged by salt deposits and eroded by the wind. Desertification has eliminated substantial tracts of agricultural land, and landscape restoration efforts are needed to improve the current situation. Kazakhstan uses the in-situ leach method for mining uranium, which has a significant impact on ground water. Typical energy and water resources management policies are seen as a priority in Kazakhstan. Even though considerable progress has been made, the lack of overarching energy and water resource management system has slowed down its progress and lessened the actual impact. Kazakhstan's agricultural researchers have expressed a great deal of concern over a disconnect with energy and water policies. They pointed out that about 66% of the country's 180 million hectares of agricultural land have slowly turned into deserts over the past several decades due to an integrated approach. The Ministry of Energy is responsible for the energy sector. Ministry of Agriculture, Committee on Water Resources is responsible for water resources. The VNR of Kazakhstan mentions stress on improving the environmental situation in the country. Challenges, such as the increase in greenhouse gas emissions, desertification, and erosion of agricultural lands, need to be addressed on a priority. The Government is introducing appropriate measures to address these issues in the framework of strategic documents and programmes. The alignment to a food-water-energy nexus issue will strengthen the strategic framework.	and water in the country.
Nigeria	Nigeria is still characterized by high reliance on food imports. Malnutrition is widespread in the entire country. Rural areas are especially vulnerable to chronic food shortages, malnutrition, unbalanced nutrition, erratic food supply, poor quality foods, high food costs, and even total lack of food. In northeastern Nigeria, the Boko Haram insurgency has led to heightened levels of displacement and food insecurity. While humanitarian access is	National sustainable food, water, energy and mineral resources management framework. Assessment of food loss, energy and mineral resources using UN instruments in selected areas;

	improving, most displaced families still rely on vulnerable host communities for basic needs, including food. This has put impoverished host communities under extreme pressure, increasing exposure to food insecurity and malnutrition. Lootings and fear of attacks have prevented many farmers from working in their fields, leading to the loss of harvests and productive assets and significantly reduced purchasing power. Sustainable and equitable access to safe drinking water remains a challenge in Nigeria, with over 86 per cent of Nigerians lacking access to a safely managed drinking water source. The problem is compounded by poor drinking water quality and a lack of equity in access. Nigeria plays a significant role in the world's crude petroleum, natural gas, and tantalum. Nigeria was the world's third-ranked producer of tantalum. The country's share of world crude petroleum was 2%, and natural gas, 1%. Nigeria also accounted for 7% of the world's trade in liquefied natural gas (LNG). The VNR of Nigeria focuses on the critical issues of poverty and an inclusive economy, health and well-being, education, gender equality, and the enabling environment of peace, security, and partnerships. While Nigeria has some poor health outcomes, such as high maternal mortality rates, there have been improvements in the under-five mortality rates (from 157 to 132). COVID-19 has challenged our public health system. A key lesson in protecting the public in such pandemics is hygiene and prioritising universal access to clean water and soap. Nigeria's current access to essential drinking water stands at 64%.	Assessment of the impact of mining on water resources in selected areas; Assessment of groundwater resources using UN tools in selected areas. Increased availability of clean and affordable energy and water in the country.
Namibia	Around 428,000 people (17% of the population) are facing high levels of acute food insecurity (IPC Phase 3) or worse, including around 14,000 people in Emergency (IPC Phase 4). In 2016, Namibia's actual gross domestic product (GDP) was $7.5 million. Mining and quarrying accounted for 7.9% of the country's real GDP. About	National sustainable food, water, energy and mineral resources management framework. Assessment of food loss, energy and

	59% was from diamond mining, 19% from metal ores mining, and 15% from uranium mining. The VNR states that in 2020, Namibia recorded the most profound economic contraction of 8.0% on account of the COVID-19 pandemic, which appears to have exacerbated the already slow economic growth due to, amongst others, the persistent drought. However, it is expected to gradually rebound to above 3% in the medium-term due to the recuperation of the mining sector's external demand and commodity prices. The unemployment rate remained high at 33.4% in 2018, the highest being amongst the youth at 46.1%. Namibia's target is to reduce the unemployment rate to 24.2% by 2022.	mineral resources using UN instruments in selected areas; Assessment of the impact of mining on water resources in selected areas; Assessment of groundwater resources using UN tools in selected areas.
Algeria	In Algeria, 88% of the population had access to "improved" sanitation, 90% and 82%, in urban and rural areas, respectively. According to the UN, 84% of Algerians had access to an improved water source in 2010. Including 74% that had access to drinking water on their premises. Algeria supplied the world with such mineral commodities as ammonia, crude petroleum, helium, and other industrial gases such as hydrogen and nitrogen, methanol, natural gas, phosphate rock, refined petroleum products, and urea. In 2017, the country was the world's third-ranked producer of helium after the United States and Qatar; it accounted for 8.8% of the world's output and held 8.2 billion cubic meters of helium resources, including 1.8 billion cubic meters of proven reserves in 2017. Algeria's actual gross domestic product (GDP) increased by 1.6% in 2017 compared with 3.3% in 2016. The nominal GDP was $167.4 billion. The nonfuel mineral sector contributed less than 1% to the GDP in 2017. It employed 32,000 people, including 7,115 employed in state-owned enterprises in 2017 compared with 7,153 in 2016. The VNR for Algeria focuses on achievements, and armed with a development approach of social, economic and environmental dimensions, the	National sustainable food, water, energy and mineral resources management framework. Assessment of food loss, energy and mineral resources using UN instruments in selected areas; Assessment of the impact of mining on water resources in selected areas; Assessment of groundwater resources using UN tools in selected areas.

	country intends to seize the collective awakening to new aspirations to bring together the appropriate conditions to achieve the SDGs by 2030. Algeria has hosted refugees from Western Sahara since 1975, one of the world's most protracted refugee crises. Despite over 30 years of uninterrupted assistance, 30 per cent of Sahrawi refugees are food insecure, and 58 per cent are at risk of food insecurity. Addressing these issues are a priority and the food-water-energy nexus approach will be crucial in meeting the states objectives.	
Iraq	Iraq is fed by two major rivers, the Tigris and the Euphrates, both originate outside Iraq. These two rivers account for 98% of Iraq's surface water supply. Their flow is therefore very vulnerable to dams and water diversions The protracted conflict and ongoing economic crisis in Iraq have left 3.2 million people food insecure, including those who depend on agriculture for their livelihoods. Violence continues to force people to abandon farms, causing the displacement of almost 3 million people and destroying or damaging harvests, equipment, supplies, livestock, seeds, crops and stored food. Water shortages and the lack of high cost of agricultural inputs continue to negatively affect the sector's performance. Families report limited livelihood opportunities, which reduces their purchasing power and restricts their access to the public distribution system. This essential social safety net entitles Iraqis to receive flour, rice and cooking oil from the government. Hydrocarbons were a leading segment of the economy of Iraq in 2017 and 2018, accounting for most of the country's exports of goods. The country ranked fourth among the leading producers of crude petroleum. The legislative framework for the mineral sector in Iraq is provided by the Ministry of Industry and Minerals law No. 38 of 2011 and the Conservation of Hydrocarbon Resources law No. 84 of 1985, respectively. The VNR of Iraq points out the "Safe Society" approach within the framework of national solid	National sustainable food, water, energy and mineral resources management framework. Assessment of food loss, energy and mineral resources using UN instruments in selected areas; Assessment of the impact of mining on water resources in selected areas; Assessment of groundwater resources using UN tools in selected areas.

	coordination and monitoring of the SDGs, which have been translated into medium-term national development plans, as well as strategies and development policies, taking into consideration the three dimensions of sustainable development: economic, social, and environmental. However, the most difficult task in this path is maintaining the delicate balance between reality and ambition and the need to meet the demands for competing priorities. Food, water and energy remain critical for a vibrant future, and a nexus approach will be important in consolidating the gains and forging a new path forward.	

3.3. Stakeholder analysis and capacity assessment

Non-UN Stakeholders listed in order of level of involvement in the project	**Type and level of involvement in the project**	**Capacity assets**	**Capacity Gaps**	**Desired future outcomes**	**Incentives**
Ministries of Agriculture and Forestry, Ministries of Environment; Ministries of Energy, Ministries responsible for water resources, Ministries of Health and supporting research institutions (e.g. national institutes of public health, research institutions)	Target audience as they are responsible for the development of relevant policies, regulations and lead their implementation at national level.	The development of nexus approaches has become high on many development agendas of said ministries and related national agencies. In terms of resources and strengths, target ministries are the key leading actors in the areas addressed by the project: they hold knowledge of the country	-Lack of understanding of the link between solving complex development problems and multi-disciplinary nexus approaches; lack of awareness on possible measures, mitigating policies and sustainable production and consumption of natural resources. Lack of experience	It is expected that the project will improve these stakeholders' understanding of the importance of the link between social , environmental and economic aspects of development It is also expected that the project will help them better	Increased capacity to analyze, measure and approach the current health, sanitation, water, food availability and food loss as well as energy and supply chain problems via integrated policy measures.

		situation, experts engaged in day-to-day work, and institutional structures that can help sustain project implementation	with applying the equity lens and the human rights based approach	address the problems they are facing in the areas of food, water and energy; in light of the panedmic and in the recovery and rebuilding phases by applying nexus-based approaches. Capacity to adopt inclusive approaches to recovering from COVID-19 will also be strengthened	
Local authorities	Target audience as they are responsible for the implementation of many policies and regulations and their practical rollout. They are also first in line to face the problems addressed by this project and in need of practical solutions.	While addressing problems at local level is relatively new, the lack of resources at local level is a strong incentive for local authorities to increase their capacity in nexus approaches to solving the water provisioning, food and every supply problems these local authorities face. Being first in line when it	Lack of understanding of the many links and inter-dependencies between some of the complex problems local authorities have to face daily with regard to water, food and energy issues and the use of multi-disciplinary nexus approaches. Lack of availabilty of guidance material and tools	It is expected that local authorities will be able to better understand how to use nexus approaches in addressing environmental, health, food and energy issues issues with nexus-based approaches it is also expected that they wil be able to apply this knowledge in their day to	Increased food security at local level and availlabilty of nutrious fodd, better use of nature based solution to the food availability issues at local level, improved sanitation and related initiatives for more hygiene, better provision of supplies and energy at local level via more integrated approaches and solutions.

		comes to interfacing with the population, localizing the tools and scaling them to their level makes them more easily implementable and usable.		day work with the most vulnerable population groups that that approach problems differently.	
NGOs and civil society (including consumer organizations)	Target audience as they contribute to the dissemination, implementation and use of mitigating measures. Some project activities may also be carried out with the involvement of NGOs (e.g. in carrying out assessments)	NGOs and civil society have done a lot of research. In terms of resources and strengths, NGOS can be a real asset when carrying work on vulnerable and marginalized groups, as they may hold related knowledge and have connections that would facilitate project implementation. In addition, NGOs and civil society hold the potential to drive the development and implementation of mitigating measures.	Are not informed adequately on the policy and regulatory implications of natural resource management.	More vital involvement of local NGOs through increased dialogue with public stakeholders. Establishment of collaboration with the relevant Ministries.	Possibility to engage actively in the food, water, health nexus for targeted mitigation measures and increased dialogue with local, national and international partners supporting progress towards SDG targets.

4. PROJECT STRATEGY: OBJECTIVE, OUTCOMES, INDICATORS, OUTPUTS

4.1. Project Strategy

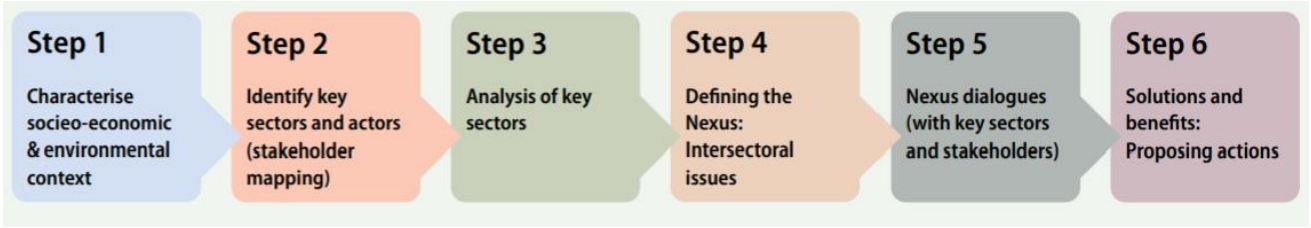
Context and trigger

Traditional silos often hamper integrated and effective action on natural resources management and the provision of essential services. This makes it challenging to achieve the aspiration of the SDGs of no hunger, reducing poverty and inequalities, access to energy, good health and well-being and access to health care, clean water, sanitation and hygiene and promoting circularity. An integrated and unified approach under the FEW nexus will strengthen the management of natural resources and their supply chains and enhance resilience to prepare for and prevent possible future shocks, including the spread of infectious diseases.

Explanation of the project

This project foresees the FEW nexus approaches to facilitate integrated solutions for sustainable socio-economic recovery and improved disaster preparedness post-COVID-19. The breaking of silos will allow technologies and synergies to flow across multiple socio-economic sectors holistically. The project will promote an infusion of new ideas from different areas of society to build resilience and reimagine healthy and prosperous living in a post-pandemic world in harmony with nature.

A process that can identify nexus pathways which is currently lacking in the beneficiary countries will be developed under this project. The nexus approach has been left intentionally broad as it can be applied at many levels. This standardised approach would aim at identifying, assessing, and classifying synergies and trade-offs between the natural resource that is being examined and other sectors. This process should ideally identify gaps and barriers that exist both for the natural resource that is being analysed and the sectors involved. Following below is a proposed step-by-step process for how this could be achieved by the project in the beneficiary countries.



The process allows for modification and application to varied scales, contexts, and nexus challenges. However, the aim of the project could ultimately be to propose actions that can address interlinkages and actions and measures that can mitigate any negative impacts generated by these interlinkages.

The main elements addressed by the project are:

1. UNIFIED FRAMEWORK FOR SOCIO-ECONOMIC RECOVERY WITH A FOOD-WATER-ENERGY NEXUS APPROACH: Developing a unified framework under the FEW nexus to assist sustainable socio-economic recovery from COVID-19 impact by strengthening best practices in natural resource management, provision of essential services such as water, sanitation and hygiene, establishing sustainable, intelligent and faster-reacting and more direct supply chains, and discovering early opportunities This includes various interlinked elements will include:

1. Development of a framework of guidelines and best practices for food marketing platforms to reduce waste in food production and enhance linkages between rural and urban sectors; enhance access to water, sanitation and hygiene and sustainable use of energy and raw materials.

2. Organizing intergovernmental and/or expert meetings to share knowledge on actions taken by the governments and providing advice in the area of water, sanitation and hygiene, with a focus on addressing inequities, by building on the intergovernmental and intersectoral platform offered by the Protocol on Water and Health and linking it to food and water security.

3. Build a tool that supports sustainability of natural resources and promotes water-related sustainable development in times of pandemics and disasters. Tentatively termed as 'COVID-19 and SDGs Policy Support System (COVID-SDGs-PSS)', this tool will provide water, health, natural resources, and emergency response professionals a platform to collaborate and work jointly to produce an authoritative evidence framework to ensure water-related sustainable development during COVID-19 recovery and beyond, and linking it to the objectives of SDG 2 on zero hunger and SDG 12 on responsible use of natural resources.

4. Mapping of natural resource value chains relevant to society, including the health and medical sector, to identify key stakeholders, material flows, and the most crucial impact areas regarding risks (regarding the potential for disruption in case of crisis) and social, environmental and economic risks). The mapping will help identify those intervention points and measures that will render the most significant improvements in securing the supply chains' enhanced resilience and interlinking it with food and water security issues. The mapping will be based on UNEP's eco-innovation methodology9. The pilot test in one country on one product focused on assessing the resilience of the value chain in case of a pandemic.

5. Improve data collection to ensure equitable access to clean and safe water and adequate sanitation and hygiene, building on the intergovernmental and intersectoral platform provided by the UNECE-WHO Regional Office for Europe Protocol on Water and Health. Special attention will be given to improving disaggregated data collection to map out inequities in the WASH sector and to improving the evidence base on the provision of WASH services in institutional settings to enable informed decision making in future preparedness and response. The linkages to food and energy will also be established.

6. Using the project-led tool 'COVID-SDGs-PSS' to generate evidence on the status of the enabling environment to ensure no or minimal impact on water-related sustainable development in the pandemic recovery situations and linking it to food and water issues. This activity will involve developing the tool in partnership with 6 countries and rolling it out to around 20 UN Member States and concurrently improving the tool based on the feedback from water, health, natural resources, and emergency response professionals, researchers, and practitioners from these countries.

7. Assessment of measures required to support the rapid rebuilding of natural resource production and critical materials supply chains and enhance food and water security linkages. Based on UNEP's eco-innovation work, identification of best practices and promotion of the business case for business models that incorporate sustainability throughout all business operations based on life cycle thinking and in cooperation with partners across the value chain, with a focus on how this increases resilience (target audience: businesses and investors).

2. BUILD RESILIENCE IN NATURAL RESOURCE MANAGEMENT: Reducing risks, improving vigilance and enhancing resilience, including regulatory frameworks and their application, performance measurement and promoting cooperation in natural resource management embracing the nexus approach to food-water-energy security. The various interlinked elements will include:

1. Development of policy brief on the FEW nexus approaches to support the implementation of sustainable distribution channels between rural and urban areas and manage the availability of nutritious food via nature-based and solutions and reduce the food loss in the beneficiary countries and the sustainable delivery of critical food-water-energy supplies.

2. Expansion of the tracing food system (developed under UNDA-11) to help cities and governments improve data collection. Building resilience measures, and direct connections to the FEW nexus through nature-based solutions.

3. Support policy development to address water, sanitation, and hygiene management in the aftermath of the COVID-19 pandemic and building on the critical lessons learned from the outbreak and connecting it with food and energy security aspects. This will include developing a methodology to assess the equity of access to water and sanitation in the context of COVID-19, with a particular focus on vulnerable and marginalized groups (e.g. homeless people, people living in informal settlements, elderly, migrants and refugees and those in conflict areas) to ensure that they are not left behind when recovering from COVID-19 impacts. By building evidence and capacity, activities will also address the provision of WASH services in institutional settings, promoting WASH's assessment in health care facilities and positioning WASH as an essential pillar to secure the quality of care and infection prevention and control (IPC).

4. Strengthening existing multilateral natural resource innovation networks11 to share knowledge and promote collective action for economic recovery with a FEW focus.

5. Development and implementation of the United Nations Resource Management system (UNRMS), an international standard for sustainable management of natural resources, focusing on climate change, circularity, resilience and financing, aligned with FEW nexus.

6. Supporting policy and governance measures for sustainable management of natural resources to mitigate supply-chain and service disruptions of energy and critical materials required for essential services and linking it with food and water security.

The project will use the Unified Framework for Socio-Economic Recovery With A Food-water-energy nexus approach to improve resilience in natural resource management and vice-versa. The latter will help speed up recovery efforts. The project will build on nexus approaches and link the more focalised and sectoral approaches to deliver in both cluster areas. The project will initially focus on more sector approaches and simultaneously develop the various tools and guidelines in close connection with the various stakeholders.

As a first step, the project will initiate the mapping and assessment work in all three areas and in as many regions as possible.

The project will also start localizing and customizing the available tools to fit the realities in the beneficiary markets. And allow for a speedy roll-out.

As a next step, the project will start building the necessary capacity in various workshops and train stakeholders in using nexus approaches.

The third phase will focus on adopting and implementing the integrated policy measures and the roll-out of the tools to a broader audience.

The project will strive to adopt the nexus methodology as mentioned above to have a sustainable and integrated approach to food-water-energy resource management, focusing on tools and guidelines that could be implemented by the beneficiary countries. The holistic approach will require coordinated actions from diverse stakeholders, especially the various ministries and national institutions in beneficiary countries. While there is an inter-regional dimension to contagious areas of Eastern Europe, Western Balkans, Central Asia, the Middle East and Africa, there will be a particular focus on regions and sub-regions. The nexus approach that will be followed by the project is scale independent, there will have the possibility to address specific issues all scales. With the increased urbanization in the coming years, it is necessary to keep the urban city agenda as part of the component of the project. The city level approach addresses the increasing trends in urbanization in beneficiary countries, which will be a major pivot in the making food systems more efficient. This said, efforts will of course be made to closely coordinate the various level outputs very efficiently to reach the target audience. This approach has been experimented in UNECE, ESCAP, ESCWA and ECA regions and have a broad Member State support. UNECE had published a comprehensive report on the Natural Resources Nexus and has received support from the member States in pursuing the objectives in a greater detail targeting a few pilot countries. The 69th Session of UNECE noted "The Commission also welcomed efforts by the secretariat to leverage its in-house expertise including through closer intersectoral collaboration to achieve greater impact on sustainable development in the region and encouraged the secretariat to seize future opportunities of this nexus approach, as appropriate." (E/2021/37 E/ECE/1494 - Economic Commission for Europe Biennial Report (9 April 2019-20 April 2021)

4.2. Results Framework

Clusters:

- **Food security and sustainable production and consumption patterns:** End hunger, achieve food security and promote sustainable food systems and agriculture
- **Water, sanitation and hygiene**: Ensure availability, safety and sustainable management of water, sanitation and hygiene for all for good health and well-being
- **Energy and raw material supply**: Ensure secure, resilient and sustainable consumption and production patterns

Intervention logic	**Indicators of achievement**	**Means of verification**
Objective: Strengthening capacities in target countries in resilient natural resource management using the food-water-energy nexus approach to advance the post-COVID-19 socio-economic recovery.		
Outcome - OC1: Improved knowledge by national institutions in the food-water-energy nexus approach for the inclusive and equitable provision of food, water, sanitation and hygiene, energy and raw materials to support the post-COVID-19 socio-economic recovery.	**IA 1.1:** At least four Member States in the Eastern Europe, Western Balkans, Central Asia, the Middle East and Africa, have implemented food-water-energy best practices in tackling sustainable natural resource management issues.	Progress reports to the project manager from the beneficiary countries will verify the development and adoption of the best practice policy approaches. Advisory missions to the target countries will also serve as verification sources. Reports from regional and national workshops and advisory missions will ensure the availability of necessary information Reporting will

		also take place under the relevant intergovernmental bodies and mechanisms including for example: the UNECE Committee on Forests and the Forest Industry, the mandatory reporting framework of the Protocol on Water and Health, Committee on Sustainable Energy etc.
	IA 1.2: At least four Member States in the Eastern Europe, Western Balkans, Central Asia, the Middle East and Africa, have demonstrated the validity of standardized food-water-energy nexus approaches to sustainable resource management through case studies and pilot projects.	Progress reports, case studies and pilot projects from the beneficiary countries will verify the development status of the approaches. Advisory missions to the target countries will also serve as verification sources. Reports from regional and national workshops and advisory missions will ensure the availability of necessary information. Reporting will also take place under the relevant intergovernmental bodies including for example: the UNECE Committee on Forests and the Forest Industry, the mandatory reporting framework of the Protocol on Water and Health, and the Committee on Sustainable Energy.

Output OP1.1: Five systematic assessment of resources, baseline conditions and innovative technologies to food availability in cities, enhancing equitable access to water, sanitation and hygiene and ensuring adequate WASH conditions in institutions; and energy and raw material availability, following a standardized FEW approach to identify, assess, and classify synergies and trade-offs between the various natural resource sectors. A standardised nexus approach will be followed, which would aim at identifying, assessing, and classifying synergies and trade-offs between the natural resource that is being examined and other sectors, including identifying gaps and barriers that exist both for the natural resource that is being analysed and the sectors involved.

Water and health component- specific activities: 1.Pilot application of the methodology on how to assess equitable access to water and sanitation in up to 2 beneficiary countries (ECE-led) 2. One systematic situation assessment of WASH conditions in health care facilities in 1 selected beneficiary country. (WHO/Europe led)

Energy component- specific activities: Assessment of critical raw materials required for essential services such as health case and energy (ECE, UNEP)

Food component- specific activities: Assessment of state of food availability in cities with particular attention to use of nature-based solutions (ECE).

Target audience: Policy-makers, officials at all levels and experts in national institutions.

OP 1.2: One inter-regional workshop using, if possible, also virtual or hybrid delivery modalities on developing guidelines for integrated management of food availability in cities, energy and raw material resources, following a standardized FEW approach to identify, assess, and classify synergies and trade-offs between the various natural resource sectors. A standardised nexus approach will be followed, which would aim at identifying, assessing, and classifying synergies and trade-offs between the natural resource that is being examined and other sectors, including identifying gaps and barriers that exist both for the natural resource that is being analysed and the sectors involved.

Water competent- specific activities: 1.5 day interregional workshop on COVID-19 and SDGs Policy Support System (COVID-SDGs-PSS) for water management (UNU-INWEH) - using, if possible, also virtual or hybrid delivery modalities.

Energy component- specific activities: 1.5 day interregional workshop on integrated management of energy and raw materials (ECE, UNEP) - using, if possible, also virtual or hybrid delivery modalities.

Physical or hybrid mode will be adjusted based on the covid-19 environment.

Target audience: policy-makers, officials at all levels and experts in national institutions.

OP1.3: Development of three guidelines and methodologies for integrated management of food, water and energy resources integrating a food management system in cities; equitable provision of water, sanitation and hygiene services; and energy and raw material resources, destined for policy-makers, officials at all levels and experts in national institutions, following a standardized FEW approach to identify, assess, and classify synergies and trade-offs between the various natural resource sectors. A standardised nexus approach will be followed, which would aim at identifying, assessing, and classifying synergies and trade-offs between the natural resource that is being examined and other sectors, including identifying gaps and barriers that exist both for the natural resource that is being analysed and the sectors involved.

Water and health component- specific activities: One methodology on assessing equity of access to water and sanitation in context of COVID-19 and other water-related epidemics (ECE led) destined for policy-makers, officials at all levels and experts in national institutions.

Energy component- specific activities: Guidelines for integrated food, water energy resource management with a special focus on the full cycle and supply chains (ECE, UNEP, UNU-INWEH) destined for policy-makers, officials at all levels and experts in national institutions.

Food Component- specific activities: Guidelines on the appropriate use of online marketing platforms to enhance agricultural products marketing and reduce food loss while considering synergies within the water-food-energy nexus in the ESCWA region. (ESCWA) destined for policy-makers, officials at all levels and experts in national institutions.

OP1.4: Two Innovative electronic tools developed for reporting food and energy issues including nature-based solutions, following a standardized FEW approach to identify, assess, and classify synergies and trade-offs between the various natural resource sectors. A standardised nexus approach will be followed, which would aim at identifying, assessing, and classifying synergies and trade-offs between the natural resource that is being examined and other sectors, including identifying gaps and barriers that exist both for the natural resource that is being analysed and the sectors involved.

Water and health component- specific activities: Development of COVID-19 and SDGs Policy Support System (COVID-SDGs-PSS) (UNU-INWEH)

Food Component- specific activities: Pilot development and rollout of a food management tool for cities including nature-based solutions, aligned with nexus approach (ECE)

Target audience: Policy-makers, officials at local and national levels and experts in national institutions.

OP1.5: Three regional or sub-regional workshops using, if possible, also virtual or hybrid delivery modalities organized to launch the guidelines and share knowledge on integrated management of food, water and energy resources, following a standardized FEW approach to identify, assess, and classify synergies and trade-offs between the various natural resource sectors. A standardised nexus approach will be followed, which would aim at identifying, assessing, and classifying synergies and trade-offs between the natural resource that is being examined and other sectors, including identifying gaps and barriers that exist both for the natural resource that is being analysed and the sectors involved.

Water and health component- specific activities: 1.5 days regional workshop to disseminate the equitable access methodology and the lessons learned from the pilot application (ECE led) - using, if possible, also virtual or hybrid delivery modalities

Target audience: Policy-makers, officials at all levels and experts in national institutions.

Energy component-specific activities: 1.5 days regional workshop using, if possible, also virtual or hybrid delivery modalities and focusing on energy and raw materials required for recovery from the Covid-19 pandemic and strengthening residence (ECE, ESCAP, ECA, ESCWA, UNEP, UNU-INWEH)

Food component-specific activities: 1.5 days regional workshop on food production and alignment to food-water-energy nexus (ESCAP), using, if possible, also virtual or hybrid delivery modalities

Physical or hybrid mode will be adjusted based on the covid-19 environment.

Target audience: Policy-makers, officials at all levels and experts in national institutions.

Outcome – OC2: *Strengthened capacity of national institutions to develop and implement food-water-energy nexus policy framework to build resilience in a safe, secure and sustainable supply of food, water and energy.*	**IA 2.1:** At least four Member States in Eastern Europe, Western Balkans, Central Asia, the Middle East and Africa have developed on the food-water-energy nexus approaches to sustainable resource management through case studies and pilot projects for implementation.	Progress reports and regular updates by the countries will verify the status of the development of the approaches. Advisory missions to the target countries will also serve as verification sources. Reports from regional and national workshops and advisory missions will ensure the availability of necessary information.
	IA 2.2: A common strategy for inter-regional cooperation on the food-water-energy nexus approach adopted in at least six target countries in Eastern Europe, Western Balkans, Central Asia, the Middle East and Africa.	Progress reports by the countries on the development and adoption of the nexus strategy to the project manager. Advisory missions to the target countries will also serve as verification sources. Reports from regional and national workshops and advisory missions will ensure the availability of necessary information.

Output OP2.1: One inter-regional/regional workshop using, if possible, also virtual or hybrid delivery modalities for implementing an integrated resiliency framework for smart food loss and food management and distribution system in cities; water, sanitation and hygiene; and energy and raw material management**,** following a standardized FEW approach to identify, assess, and classify synergies and trade-offs between the various natural resource sectors. A standardised nexus approach will be followed, which would aim at identifying, assessing, and classifying synergies and trade-offs between the natural resource that is being examined and other sectors, including identifying gaps and barriers that exist both for the natural resource that is being analysed and the sectors involved.

Water and health component- specific activities: Sharing knowledge and gathering lessons learned on actions taken by the governments in the area of water, sanitation and hygiene in the context of COVID-19 or other water-related epidemics. Activities include consultants to support knowledge sharing activities; subregional/regional meeting for dissemination of lessons learned; communications (ECE led with close collaboration with WHO/Europe) - using, if possible, also virtual or hybrid delivery modalities Target audience: policy-makers, officials at all levels and experts in national institutions.

Energy component-specific activities: 1 workshop on integrated food-water-energy resource management and alignment to the natural resource nexus. (ECE, ESCAP, UNEP, UNU-INWEH) - using, if possible, also virtual or hybrid delivery modalities

Food component-specific activities: 1 workshop on implementing food management as well as nature base solutions for cities (ECE) - using, if possible, also virtual or hybrid delivery modalities

Physical or hybrid mode will be adjusted based on the covid-19 environment.

Target audience: Policy-makers, officials at all levels and experts in national institutions.

OP2.2: Three policy briefs on enhancing integrated and sustainable management of food and its availability in cities, and energy resources in Central Asia, the Middle East and Africa developed, following a standardized FEW approach to identify, assess, and classify synergies and trade-offs between the various natural resource sectors. A standardised nexus approach will be followed, which would aim at identifying, assessing, and classifying synergies and trade-offs between the natural resource that is being examined and other sectors, including identifying gaps and barriers that exist both for the natural resource that is being analysed and the sectors involved.

Water Component-specific activities: Policy brief on water-related sustainable development in the pandemic recovery situations and linking it to food and water issues (UNU-INWEH).

Energy Component-specific activities: Policy brief on critical raw material supply chain resilience and support for health sector (ECE, UNEP).

Food Component-specific activities: Policy brief on aligning food waste, climate change and the food-water-energy nexus for Arab countries. (ESCWA).

Target audience: Policy-makers, officials at all levels and experts in national institutions.

OP2.3: Three sub-regional training workshops organized to enhance practitioners' capacity to provide WASH conditions (focus on institutions), energy and food following a standardized FEW approach to identify, assess, and classify synergies and trade-offs between the various natural resource sectors, using, if possible, also virtual or hybrid delivery modalities. A standardised nexus approach will be followed, which would aim at identifying, assessing, and classifying synergies and trade-offs between the natural resource that is being examined and other sectors, including identifying gaps and barriers that exist both for the natural resource that is being analysed and the sectors involved.

Water and health component-specific activities: 1.5 days sub-regional workshop on promoting interventions on WASH in schools for better health and educational outcomes (WHO/Europe led) - using, if possible, also virtual or hybrid delivery modalities

Energy component-specific activities: Sub-regional workshop on raw material and integrated natural resource nexus approach (ECE, UNU-INWEH, UNEP) - using, if possible, also virtual or hybrid delivery modalities

Food component-specific activities: 1 sub-regional workshop on improved food security through nature-based and integrated approaches in cities (ECE)- using, if possible, also virtual or hybrid delivery modalities

Physical or hybrid mode will be adjusted based on the covid-19 environment. Target audience: policy-makers, officials at all levels and experts in national institutions.

OP2.4: Two packages of training materials developed based on five assessments for sub-regional capacity building events on the FEW nexus approaches for policy-makers, officials at all levels and experts in national institutions in all beneficiary countries. A standardised nexus approach will be followed, which would aim at identifying, assessing, and classifying synergies and trade-offs between the natural resource that is being examined and other sectors, including identifying gaps and barriers that exist both for the natural resource that is being analysed and the sectors involved.

Water and health component-specific activities: Consultants to develop training materials for policy-makers, officials at all levels and experts in national institutions and delivery of sub-regional and national capacity building events (WHO/Europe led)

Food component-specific activities: Training material on integrated nature-based solutions destined for officials at local and national levels and experts in national institutions.(ECE)

Target audience: policy-makers, officials at all levels and experts in national institutions.

OP2.5: Three pilot applications and rollouts of integrated resiliency framework for food availability prevention in cities and energy in selected countries (one each in the pan-European region, the Middle East and Africa), following a standardized FEW approach to identify, assess, and classify synergies and trade-offs between the various natural resource sectors. A standardised nexus approach will be followed, which would aim at identifying, assessing, and classifying synergies and trade-offs between the natural resource that is being examined and other sectors, including identifying gaps and barriers that exist both for the natural resource that is being analysed and the sectors involved.

Water component-specific activities: Piloting of 'COVID-SDGs-PSS' to generate evidence on the status of the enabling environment to ensure no or minimal impact on water-related sustainable development in the pandemic recovery situations and linking it to food and water issues. (UNU-INWEH)

Food conductivity-specific activities: Pilot and roll out of integrated resilience framework for food availability and nature-based solutions in cities (ECE)

Target audience: Policy-makers, officials at all levels and experts in national institutions.

4.3. Risks and mitigation actions

Risks	Likelihoods of risks	Mitigating Actions
Generally speaking, the implementation of the project does not include considerable risks. The technologies, regulations, and policies discussed are in the public domain. They do not contain anything that could provoke a controversy both for the project execution and its effects.		
Possible political instability in selected countries would not prevent the government (at the technical level) and energy and water sectors experts in most project activities. Still, it could delay the effective implementation of the project recommendations and the attraction of the desirable investment, which is out of the immediate scope of the project.	Low	The project will be executed at the technical level, with the full support of the level of high-level governmental officials. This would contribute to ensuring the successful implementation and sustainability of the project.
Lack of political support/regulations	Low	Holding regular consultations and bilateral and multilateral meetings with stakeholders. To ensure commitment in the project implementation, every effort will be made to keep high-level decision-makers informed of progress and plans.
COVID-19 related disruptions on travel and meetings	Medium	Every effort will be made to make the activities flexible to be in person or virtual as required. Back-up plans will also be developed to

		re-allocate resources if certain activities cannot be implemented, for instance, by spending such resources in online activities to disseminate project results.

4.4. Sustainability and scaling-up

Sustainability is essential for this project. The project outcomes must pave the way for long-lasting results, fostering SDG implementation, ensuring inclusive COVID-19 recovery, and promoting long-term adoption and scaling up of best practices.

The capacity of national governments and other stakeholders across silos, which will be developed within the project, is an essential factor for the long-term sustainability of the project outcomes.

The project will be a coherent continuation of the work that has already started in UNECE through its intergovernmental work, conventions as well as experience made during previous UNDA projects, particularly in the areas of building broad local and international partnerships for sustainability and ensuring equitable access to water and sanitation. The present project will also strive to strengthen existing and build new partnerships to increase local and community ownership (city-angle) and sustainability beyond the project's life cycle. These national and regional networks of experts will be set up from the project's outset with mixed participation (public, private, local agencies and civil society) and will be a pillar in this respect and key for ensuring sustainability. The aim is to lead the activities under this project towards national and regional follow-up and continuation and set up mechanisms and networks linked to existing inter-governmental work and mechanisms. This would ensure sustainable changes for the years to come.

Therefore, the project will build on already established partnerships with other international organizations, donor agencies, and experts of intergovernmental processes to ensure substantial and financial support for sustainable relations.

With respect to its water, sanitation and health component, the project's sustainability is significantly enhanced because activities take place in States Parties to the Protocol on Water and Health. This offers two key advantages:

1. The Protocol is a legally binding instrument, which means that Parties have a legal obligation to implement its provisions.
2. The Protocol offers an institutional framework and mechanisms for follow-up and review, including a mandatory reporting system and regular intergovernmental and expert meetings to exchange experience. Beneficiary countries will continue reporting under the Protocol even after the project's completion, so the mechanism can monitor and uphold project results long-term.

Similarly, the project's sustainability and the continuation of its work can be enhanced in food availability and nature-based solution in urban areas via UNECE's work on cities and urban forestry via the relevant and existing inter-governmental mechanism expert groups. The Forum of Mayors is a vehicle UNECE avail of that will help ensure continuity of results and replication of efforts across the entire region even beyond the beneficiary countries.

5. MONITORING AND EVALUATION

5.6. Monitoring

The UNECE project manager, with input from the partnering implementing agencies, will be responsible for the regular monitoring of the project implementation. The project's progress will be reported each year by annual progress reports. The material and information related to the project will be publicly shared on a dedicated project website, managed by UNECE.

The reports will be provided according to the below timeline:

- By **31 January 2023**: 1st Annual Progress Report
- By **31 January 2024** 2nd Annual Progress Report
- By **31 January 2025**: 3rd Annual Progress Report
- By the **end of June 2026**: External Evaluation Report and Final Report

In addition, a questionnaire will be developed by the project manager to evaluate the impact, effectiveness and long-term sustainability of the project activities. The questionnaire will be circulated regularly after each workshop in the beneficiary countries among participants in the workshops.

5.7. Final Report

The project manager will collect data on the implementation of the project and will include it in a structured account of the implementation of the main elements of the project. The Final Report, which will follow the guidelines of the DA Team, will be submitted to the DA by the end of June 2026. If an external evaluation is required ("projects to be evaluated will be selected at midpoint"), a draft of the Final Report will be submitted as early as possible to the external evaluator (preferably at the time of hiring the evaluator in January 2026).

5.8. Evaluation

If the project is selected for evaluation, the project will be evaluated in line with the Development Account Evaluation Framework and the ECE Evaluation Policy. The evaluation of the project will be conducted by an external evaluator during the last six months of the project. The evaluator will have access to project progress reports, workshop reports, as well as evaluation forms, which include a basic set of workshop evaluation questions in ECE and, to be completed by all participants in project workshops. The evaluator will also conduct interviews with key project stakeholders from target countries and partner organizations, conduct desk research and prepare the evaluation report. The ECE Programme Management Unit will provide guidance and oversee the conduct of the project evaluation. The results of the evaluation will be published at Open ECE and shared with ECE member States through the annual evaluation report.

6. MANAGEMENT, PARTNERSHIP AND COORDINATION AGREEMENTS

The project will be implemented jointly by UNECE (executing entity), ESCAP, ESCWA, ECA, UNEP, UNU-INWEH, WHO / Europe (cooperating entities). The project will be coordinated via periodic project steering group meetings on all aspects related to project management, implementation and activities. The focal points in each organization will be repo0sible for the liaison with the project manager and other implementing agencies and participate in the project steering group meetings. This will ensure that the nexus approach is followed in all activities and that deliverables, schedules and activities can be coordinated in the most efficient way possible.

The UN country teams will be informed and involved whenever possible in national and local activities and, when necessary, invited to dedicated project group meetings which are meetings that include the steering group and invited other participants.

UNECE, with the input from ESCAP, ESCWA, ECA, UNEP, UNU-INWEH, WHO / Europe, will carry out administrative and reporting responsibilities. Moreover, the responsibilities of the UNECE will include coordination of activities with the governments and other stakeholders on the topics related to UNECE expertise, the organization of workshops and provision of trainers for these workshops, as well as support the development of training material, electronic tools and pilots (as foreseen under the project deliveries).

ESCAP will contribute to the interregional and regional workshop and training focusing on the food-water-energy nexus in Central Asia.

ESCWA will provide guidelines on the appropriate use of online marketing platforms to enhance agricultural products marketing and reduce food loss while considering synergies within the water-food-energy nexus in the ESCWA region. ESCWA will also develop a policy brief on aligning food waste, climate change and the food-water-energy nexus for Arab countries.

ECA will support the interregional workshops and regional workshops with a particular focus on Africa.

UNEP will use its eco-innovation methodology to support the food-water-energy nexus activities.

UNU-INWEH will generate evidence on the status of the enabling environment to ensure no or minimal impact on water-related sustainable development in the pandemic recovery situations and linking it to food and water issues.

WHO/Europe, as the co-secretariat of the Protocol on Water and Health, will work closely with UNECE on activities related to water, sanitation, hygiene and health. The cooperation between these two entities is long-standing. It will build on pre-existing arrangements, including Memorandum of Understanding (MOU) and other related planning documents. For this project, a specific MOU may be developed as relevant and appropriate, building on the model of the one that was prepared for the implementation of a previous UNDA project (9th tranche), also jointly carried out by UNECE and the WHO/Europe.

Country specific activities will be coordinated with the RCOs and UNCTs.

ANNEXES

ANNEX 1: RESULT-BASED WORK PLAN AND BUDGET DETAILS

Table 1.1 – Results based work plan and budget

Output #	**Timeframe by output**		**Budget class and Code** *(Please use the budget classes listed in the table above.)*		**Amount (USD)**
	Year *(2022, 2023, 2024, 2025*	**Quarter** *(Q1, Q2, Q3, Q4)*			
OP1.1	2022 2023	Q1, Q4 Q3, Q4	Other Staff Cost (GTA)	**015**	10,000
			Consultants and Experts	**105**	20,000
			Travel of Staff	**115**	6,832
			Contractual Services	**120**	40,000
			General Operating Expenses	**125**	4,480
			Grants and Contributions (Workshops/Study Tours/EGMs)	**145**	0
OP1.2	2022 2023	Q1, Q4 Q3, Q4	Other Staff Cost (GTA)	**015**	0
			Consultants and Experts	**105**	20,000
			Travel of Staff	**115**	6,832
			Contractual services	**120**	0
			General Operating Expenses	**125**	4,480
			Grants and Contributions (Workshops/Study Tours/EGMs)	**145**	47,880
OP1.3	2022 2023	Q1, Q4 Q3, Q4	Other Staff Cost (GTA)	**015**	10,000
			Consultants and Experts	**105**	20,000
			Travel of Staff	**115**	6,832
			Contractual services	**120**	18,000
			General Operating Expenses	**125**	4,480
			Grants and Contributions (Workshops/Study Tours/EGMs)	**145**	0
OP1.4	2022 2023	Q1, Q4 Q3, Q4	Consultants and Experts	**105**	10,000
			Travel of Staff	**115**	6,832
			Contractual services	**120**	200,000
			General Operating Expenses	**125**	4,480
			Grants and Contributions (Workshops/Study Tours/EGMs)	**145**	0
OP1.5	2022 2023	Q1, Q4 Q3, Q4	Other Staff Cost (GTA)	**015**	5,000
			Consultants and Experts	**105**	20,000
			Travel of Staff	**115**	6,832
			Contractual Services	**120**	0

			General Operating Expenses	**125**	4,480
			Grants and Contributions (Workshops/Study Tours/EGMs)	**145**	47,880
OP2.1	2024 2025	Q1, Q4 Q3, Q4	Other Staff Cost (GTA)	**015**	10,000
			Consultants and Experts	**105**	10,000
			Travel of Staff	**115**	6,710
			Contractual services	**120**	0
			General Operating Expenses	**125**	10,000
			Grants and Contributions (Workshops/Study Tours/EGMs)	**145**	16,140
OP2.2	2024 2025		Consultants and Experts	**105**	15,400
			Travel of Staff	**115**	6,710
			Contractual services	**120**	0
			General Operating Expenses	**125**	3,520
			Grants and Contributions (Workshops/Study Tours/EGMs)	**145**	0
OP2.3	2024 2025		Consultants and Experts	**105**	15,400
			Travel of Staff	**115**	6,710
			Contractual services	**120**	0
			General Operating Expenses	**125**	3,520
			Grants and Contributions (Workshops/Study Tours/EGMs)	**145**	37,620
OP2.4	2024 2025		Consultants and Experts	**105**	15,400
			Travel of Staff	**115**	0
			Contractual services	**120**	0
			General Operating Expenses	**125**	3,520
			Grants and Contributions (Workshops/Study Tours/EGMs)	**145**	0
OP2.5	2024 2025		Consultants and Experts	**105**	3,800
			Travel of Staff	**115**	6,710
			Contractual services	**120**	0
			General Operating Expenses	**125**	3,520
			Grants and Contributions (Workshops/Study Tours/EGMs)	**145**	0

Table 1.2 – Planned annual budget expenditure and cumulative financial implementation rate.

Year	Planned annual budget expenditure	Cumulative financial implementation rate
2022	$ 250,000	35.7%
2023	$ 250,000	70%
2024	$ 100,000	85%
2025	$ 100,000	100%
Total	$ 700,000	

ANNEX 2: DETAILED JUSTIFICATION BY CODE

Total budget $ 700,000

1. **Other Staff Costs (GTA) (015): $ 35,000 (Total) (5%)**

Temporary assistance to perform the tasks of:
- Coordinating and supporting pilot application of the equitable access methodology, in support of **OP1.1** ($ 10,000 per month x 1 month) = $ 10,000
- Coordinating and providing technical input for the development of a methodology on assessing equity of access to water and sanitation in context of COVID-19 and other water-related epidemics, in support of **OP1.3** ($ 10,000 per month x 1 month) = $ 10,000
- Coordinating and supporting (technically and organizationally as needed) the preparation of a regional workshop to disseminate the equitable access methodology and the lessons learned from pilot application, in support of **OP1.5** ($ 10,000 per month x 0.5 month) = 5,000
- Coordinating, supporting and providing technical input to knowledge-sharing activities on actions taken by the governments in the area of water, sanitation and hygiene in the context of COVID-19 or other water-related epidemics, in support of OP2.1 ($ 10,000 per month x 1 month) = $ 10,000
- Generally coordinating relations between ECE/water and WHO/Europe when and as needed for the achievement of the above-mentioned outputs

2. **Consultants and Experts (105): $ 150,000 (Total) (21.4 %)**

(A separate breakdown by national/regional consultants and international consultants should be provided)

(a) *International consultants*

1 International consultant for the task(s) of rapid initial assessment of resources and innovative technologies ($ 5,000 per month x 4 months) = **$20,000** under OP1.1

1 International consultant for the task(s) of developing guidelines and best practices for integrated management ($ 5,000 per month x 4 months) = **$20,000** under OP1.2

1 International consultant for the task(s) of developing project methodologies and electronic tools ($ 5,000 per month x 4 months) = **$20,000** under OP1.3

1 International consultant for the task(s) of developing policy brief ($ 5,000 per month x 4 months) = **$20,000** under OP1.5

1 International consultant for the task(s) of developing training materials ($ 5,000 per month x 2 months) = **$10,000** under OP1.4

1 international consultant to support knowledge sharing activities on actions taken by governments in the area of water, sanitation, hygiene and health within the inter-regional/regional workshop (OP2.1). ($ 5,000 per month x 2 months) = **$10,000** under OP2.1

(b) *National / Regional consultants*

1 national consultants per country (6) for task(s) supporting pilot applications of integrated resiliency framework. **($ 2,500 x 4 months x 5 countries) = $ 50,000** under OP2.2, OP2.3, OP2.4, OP2.5

3. Travel of Staff (115): $ 61,000 (Total) (9%)

UN Staff (25 missions) by UN staff for the purpose of rapid assessment, supporting inter-regional and regional workshops, provide training and expertise OP1.1 (2 staff x 2 missions) OP1.2 (8 staff x 1 mission), OP1.5 (2 staff x 1 missions), OP2.1 (8 staff x 1 missions), OP2.3 (2 staff x 1 missions), OP2.5 (1 staff x 1 missions). As the project is implemented by seven partner organizations and each organization having multiple divisions involved from food, water, energy areas 8 staff missions as a minimum is required for OP 1.2 and OP2.1.

($2,440 average mission cost x 25 = $ 61,000)

4. Contractual services (120): $ 258,000 (Total) (36 %)

Contractual services of $118,000 (food: Development, roll-out and maintenance of a food management tool for cities)); $40,000 (water and health); $50,000 (water) $50,000 (energy and raw materials innovation management) for online tools, modelling, methodology, IT services, piloting of methodologies and systematic assessments under OP1.1, OP1.4 and OP 2.5.

5. General operating expenses (125): $ 46,480 (Total) (7 %)

(a) *Communications (printing of materials and promotion)*

In support of OP1.2, OP1.5, OP2.1, OP2.3 = $ 2,500 x 8 workshops = $ 20,000.

(b) *Other general operating expenses (venue and conference services)*

In support of OP1.2, OP1.5, OP2.1, OP2.3 = $ 3,310 x 8 workshops = $ 26,480.

6. Grants and Contributions (145): $ 149,520 (Total) (21%)

(a) *Workshops*

2 Inter-regional (Eastern Europe, Western Balkans, Central Asia, Middle East, Africa) workshop OP1.2 and OP2.1 with virtual/hybrid elements, if possible. Duration of workshop: 3 days; ($ 1563 per participant) x (3 in person and 10 virtual participants x 8 countries = 24 in person and 80 virtual participants + 8 experts) x (2 inter-regional workshops) = **$ 100,000**

6 regional workshops with virtual/hybrid elements, if possible (2 per region) OP1.5 and OP2.3. Duration of the workshop: 3 days; support of **30** national in person 60 virtual participants **(5 national in person and 10 virtual participants x $ 800 per participant x 6 countries =$ 24,000),** travel of experts to the national workshops **($1375 per participant x 6 experts x 6 workshops = $ 49,520)**

The final number of participants will be adjusted depending on the covid-19 environment.

ANNEX 3: BREAKDOWN OF EXPENSES BY ENTITY

Entity	Cost Centre	Functional Area	WBSE	Amount
UNECE (and UNU)	13824	20AC0005		$451,000
WHO/Europe	13824 Amount to be transferred to WHO/Europe	20AC0005		$49,000

	through an MOU (see section 6 for further details)			
ESCAP	11509	19AC0004		$50,000
ESCWA	17005	22AC0001		$80,000
ECA	13727	18AC0011		$20,000
UNEP	11266	14AC0006 – UNEP Resource Efficiency		$50,000
TOTAL				**$700,000**