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Circular Economy in the Humanitarian Sector Toolkit

Jordan

July 2022

About UNEP

Since its inception in 1972, the United Nations Environment Programme (UNEP) has been the global authority that sets the environmental agenda, promotes the coherent implementation of the environmental dimension of sustainable development within the United Nations system and serves as an authoritative advocate for the global environment.
UNEP's mission is to provide leadership and encourage partnership in caring for the environment by inspiring, informing, and enabling nations and peoples to improve their quality of life without compromising that of future generations.

This report is part of a set of documents developed as a result of the assessment of Circular Economy in the Jordan Humanitarian Response funded by UNEP in 2021, in collaboration with its strategic partner the Jordanian Ministry of Environment, and implemented by the NGOs IMPACT and ACTED.

About the Jordanian Ministry of Environment

The Ministry of Environment (MoEnv) of Jordan was established in 2003 under the Environment Protection Act. Since its conception, the ministry has been creating effective policies, strategies and incorporating environmental concepts into Jordans national development plans and strategies, contributing to sustainable development, improving the quality of Jordan's environment and ecosystems by protecting and conserving natural resources, reducing adverse environmental impacts, increasing public awareness on environmental issues, and enhancing institutional capacities of organizations involved in the environment sector.

About ACTED

With a 27 years history of going the last mile to support the most vulnerable worldwide, ACTED is an international non-governmental organisation implementing emergency, rehabilitation and development projects in 38 of some of the world's most vulnerable countries affected by conflicts, disasters or socio-economic hardship thanks to its teams of over 6,300 staff.
Independent, private and not for profit, ACTED's vision is a 3Zero world: Zero Exclusion- because nobody should be left behind; Zero Carbon- because we only have one planet; Zero Poverty- because poverty should not hold back potential.

About IMPACT

IMPACT Initiatives is a Geneva based think-and-do-tank, created in 2010. IMPACT is a member of the ACTED Group.
IMPACT's teams implement assessment, monitoring & evaluation and organisational capacity-building programmes in direct partnership with aid actors or through its inter-agency initiatives, REACH and Agora. Headquartered in Geneva, IMPACT has an established field presence in over 15 countries. IMPACT's team is composed of over 300 staff, including 60 full-time international experts, as well as a roster of consultants, who are currently implementing over 50 programmes across Africa, Middle East and North Africa, Central and South-East Asia, and Eastern Europe.

TOOLKIT INTRODUCTION

According to the United Nations Office for the Coordination of Humanitarian Affairs (UN-OCHA), over 270 million people in 63 countries are currently being affected by humanitarian crises, with more than 80 million of these people having been forcibly displaced from their homes. Most of these humanitarian needs are results of conflicts or civil wars, whereas natural disasters largely influenced by the climate change also make up a considerable part of the factors influencing humanitarian challenges. In 2020, 75% of the new displacements (30.7 million people) were caused by natural disasters[1], with the possibility of increasing incidence due to the ongoing climate changes.

Over the past years, the humanitarian community has started to recognize and be more aware about the environmental elements comprising a humanitarian response. According to United Nations Environment Programme (UNEP), environmental issues are often underlying and contributing factors to humanitarian crises, exacerbating risk and vulnerability especially when they are addressed too late.[2] At the same time, the Paris Agreement widely recognized that sustainable consumption and production (SCP) is critical in the role addressing the climate change, as currently the extraction of natural resources accounts for 50% of the global greenhouse gas emissions.[3]

As a result, the Circular Economy represents a relevant alternative to the traditional take-make-waste model. Circular Economy aims to keep resources at the highest possible value during their lifetime and to minimize waste in the economic processes.[4] The humanitarian sector could make use of the Circular Economy, as interventions such as waste recovery, increasing value of products, reuse, recycling and thinking through the life cycle of products used in humanitarian assistance fit into the concept. Circularity in humanitarian programming could be achieved through focused efforts to mitigate the impact of humanitarian action on the environment and natural resource consumption, while still continuing to provide for the needs of the most vulnerable.[5]

Under the Resource Efficiency unit of UNEP Regional Office for West Asia (ROWA), and in full collaboration with partners in the region, the main objectives of UNEP's partnership with the NGOs ACTED and IMPACT Initiatives (IMPACT) were to assess and understand the landscape of Circular Economy activities being implemented under the 2020-2022 Jordan Response Plan (JRP), identify gaps and opportunities for further growth of such activities under the plan, and develop actionable guidelines and tools to support partners further integrating Circular Economy activities into their interventions under the JRP. This partnership resulted in a report mapping projects and stakeholders implementing Circular Economy activities under the JRP in Jordan, outlining barriers to implementation and the impact of COVID-19, and identifying linkages with circularity within the JRP to encourage future programming.

[1] Internal Displacement Monitoring Centre (2021). Global Report on Internal Displacement. Available online.
[2] United Nations Environmental Programme (UNEP) (2020), Environmental sustainability of humanitarian action. Available online.
[3] UNEP (2019), Global Resource Outlook. Available online.
[4] Circular economy is an alternative economic model for exchange and production that seeks to decouple economic growth from material dependency. The idea is to increase resource efficiency use and reduce environmental impact at all stages of the product (goods and services) life cycle, reducing resource waste, ensuring the reduction of environmental impacts, while allowing us to meet our needs within planetary boundaries and developing the well-being of individuals. UNEP, Green Economy Blogspot, 2018
[5] Inspire Consortium (2020), environmental footprint of humanitarian assistance-scoping review. Available online.

Based on the outcomes of the *Circular Economy in the Humanitarian Sector* report, IMPACT, ACTED and UNEP designed this toolkit which can be used by all stakeholders working in the humanitarian sector as a guide supporting efforts in shifting their programmes towards increased circularity. The aim of this toolkit is to be used as a reference by all stakeholders who wish to better grasp the possible applications of Circular Economy in the humanitarian sector, identify existing elements of circularity in their activities and further integrate circularity within their strategies and programmes.

The toolkit includes:

- An **executive summary** of the *Circular Economy in the Humanitarian Sector in Jordan* report, which maps projects and stakeholders implementing Circular Economy activities under the JRP, outlines barriers to implementation and the impact of COVID-19, and identifies linkages with circularity within the JRP to encourage future programming.
- An **overview of the methodology** followed by the *Circular Economy in the Humanitarian Sector in Jordan* assessment and toolkit, including intended use as well as challenges and limitations.
- Chapter 1: A **description of the Circular Economy theoretical framework** disaggregated by the 9-R Framework and examples of applicability of the framework in the humanitarian sector.
- Chapter 2: A **brief comparison of linear and Circular Economy,** followed by real world examples on how circularity can be included in humanitarian programming.
- Chapter 3: A **series of case-studies** of humanitarian programmes in Jordan which successfully applied circularity within their interventions, based on the key informant interviews conducted during the *Circular Economy in the Humanitarian Sector in Jordan* assessment.
- Chapter 4: Building upon the findings of the *Circular Economy in the Humanitarian Sector in Jordan* report, this chapter provides an **outline of the methods of integrating circularity into three key sectors** of the JRP where Circular Economy has the most possibilities to be integrated into humanitarian programming.
- Chapter 5: The chapter includes a **scoring tool** and **checklist to identify whether an organisation or programme is circular** and to which extent, as well as a flexible **action plan template** for implementers desiring to set circularity goals. While a scoring approach is provided, the main objectives of the two tools are to guide stakeholders in identifying existing contributions to circularity as well as potential for added impact.
- Chapter 6: A multi-phased **roadmap** which describes the **steps that could be taken by humanitarian actors to make their programmes more circular**. This chapter also includes two fictional case studies from organisations who followed this phased approach to identify opportunities of integrating circularity in humanitarian projects.
- Chapter 7: The chapter provides a broad **outline of how circularity can be communicated** by humanitarian actors, with goals disaggregated by type of stakeholder interviewed as part of the *Circular Economy in the Humanitarian Sector* assessment.
- Chapter 8: This chapter **provides a parallel between the Sustainable Development Goals (SDGs) and Circular Economy characteristics**, while focusing on the humanitarian sector.

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List of Acronyms

ACF	Action Against Hunger
AMEU	Appraisal, Monitoring and Evaluation Unit (ACTED)
BPRM	Bureau of Population, Refugees, and Migration
CE	Circular Economy
CfW	Cash for work
CSO	Civil Society Organisation
FAO	Food and Agriculture Organisation
GOJ	Government of Jordan
ILO	International Labour Organisation
INGO	International Non-Governmental Organisation
JRP	Jordan Response Plan
KI	Key Informant
KII	Key Informant Interview
MoA	Ministry of Agriculture
MoEnv	Ministry of Environment
MSMEs	Micro, small & medium enterprises
MWI	Ministry of Water and Irrigation
NARC	National Agriculture Research Centre
NERC	National Energy Research Centre
NFIs	Non-food items
NGO	Non-Governmental Organisation
NRC	Norwegian Refugee Council
SAO	Senior Assessment Officer
SDR	Secondary Data Review
SFM	Senior Field Manager
SWM	Solid waste management
UNCT	United Nations Country Team
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
WFP	World Food Programme

Geographic Classifications

Governorate Jordan is divided into 12 governorates.

- The governorate has an executive and advisory board.
- The governorate is headed by the governor.
- The governor is the highest executive authority in the governorate and the representative of the executive authority and leads all government employees in the governorate. The governor also has the authority over all governorate departments except for the judge.

District Governorates are divided into 51 districts.

- The district has an executive and advisory board.
- The district reports to the governorate.

- The district office is an administrative area within the governorate, headed by the district officer or district administrator.

Sub-District Districts are divided into 89 sub-districts

- The governorate, district and sub-district represent the government and are designed to enforce the law.

Municipality A civil financially independent institution that can decide its borders

- The municipality plans, prepares, and implements programmes for sustainable development in consultation with the local communities.
- The municipalities manage all services, local facilities, and projects which have been assigned to them on their own, or through partnership with the private sector and/or civil society institutions.
- The municipal administration council consists of a chairman (Mayor) and members; the council is directly elected by the community residents.

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EXECUTIVE SUMMARY OF THE ASSESSMENT - Circular Economy in the Humanitarian Sector in Jordan

Jordan hosts one of the largest number of refugees relative to its population in the world sheltering displaced persons from Syria, along with asylum seekers and migrants from, among other countries, Egypt, Iraq, Pakistan, Palestine, Sudan and Yemen. As the vast majority of refugee and migrant communities live in host communities, the Government of Jordan (GoJ), in partnership with national, international non-governmental organisations (N/INGOs), and international institutions have been working to provide durable solutions to the people in need.

In order to address the challenges posed by the Syria crisis, the GoJ has developed and leads the Jordan Response Plan (JRP). The role of JRP is to reduce pressure on Jordan as a host country and improve living conditions and self-reliance, while supporting Jordan in maintaining the quality of services provided for Syrian refugees and vulnerable Jordanians in host communities.[6] The 2020-2022 Jordan Response Plan (JRP) aims "to create a more inclusive and aligned plan in the hopes of decreasing the vulnerability of both refugees and host communities and provide longer-term sustainable solutions that will result in tangible effects on beneficiaries".

Jordan is a country burdened by an extreme scarcity of water and a low level of natural resources. The population growth, along with droughts, transboundary tensions over water resources and inefficient use of water could lead to an environmental crisis, on top of the pre-existing vulnerabilities influenced by the Syria crisis. Among other actors, the United Nations Environment Programme (UNEP) is a leading global environmental authority that sets the global environmental agenda, promotes the coherent implementation of the environmental dimension of sustainable development within the United Nations system and serves as an authoritative advocate for the global environment. UNEP works in the area of resource efficiency and focuses on supporting regions, countries and businesses in their transition to Inclusive Green Economies. Through its focus on Inclusive Green Economies, the programme pays specific attention to the social impact of environmental interventions, sustainable development and green economy.[7]

Jordan was one of the first countries in the region to explore the prospects for a green economy through a study supported by UNEP in 2010 "Towards a Green Economy in Jordan". The study reviewed the state of investments in Jordan and the implications for a transition towards a green economy. It tackled the economic, social and environmental challenges of Jordan, and identified the sectors that appear to offer a significant potential for green investment to drive a transition towards a green economy. In 2013, UNEP continued its support to Jordan to help transform it to a green and circular economy[8] through the

[6] Government of Jordan, *The Jordan Response Plan 2020 – 2022*. Available online.
[7] Green economy is a low carbon, resource efficient economic approach, focused activities that are socially inclusive. "In a green economy, growth in employment and income are driven by public and private investment into such economic activities, infrastructure and assets that allow reduced carbon emissions and pollution, enhanced energy and resource efficiency, and prevention of the loss of biodiversity and ecosystem services". (UNEP, 2021)
[8] Circular economy is an alternative economic model for exchange and production that seeks to decouple economic growth from material dependency. The idea is to increase resource efficiency use and reduce environmental impact at all stages of the product (goods and services) life cycle, reducing resource waste, ensuring the reduction of environmental impacts, while allowing us to meet our needs within planetary boundaries and developing the well-being of individuals. UNEP, Green Economy Blogspot, 2018

SwitchMed[9] programme which included the development of the Sustainable Consumption and Production National Action Plan (SCP-NAP)[10] and the Pilot demo projects. During the development of the action plan in 2014, the Council of Ministers approved the establishment of the Green Economy Unit within the Ministry of Environment.

In response to the emerging COVID-19 pandemic, the Jordanian government announced a set of measures and incentives to address immediate liquidity and cost of financing for various sectors/businesses, and vulnerable households. In spite of this, the lockdown to limit the spread of COVID-19 drastically impacted Jordan's economy and elevated the unemployment rate to 24.7% in the 4th quarter of 2020.[11] It also limited tourism activities, causing an approximate loss of 3 million JODs for the year 2020 in this key sector of the economy.[12] As UNEP aims to continue supporting countries in West Asia in Building Back Better post COVID-19, a special focus has been given towards the role of the humanitarian sector in Jordan and its contribution to shifting to a more Circular Economy.

Under the Resource Efficiency unit of UNEP Regional Office for West Asia (ROWA), and in full collaboration with partners in the region, the main objectives of this assessment implemented through a partnership between UNEP and the INGOs ACTED and IMPACT Initiatives (IMPACT) were to understand the landscape of Circular Economy activities being implemented under the 2020-2022 Jordan Response Plan (JRP), to identify gaps and opportunities for further growth of such activities under the plan and develop actionable guidelines and tools to support partners to further integrate Circular Economy activities into their interventions under the JRP.

For the purposes of this assessment, the following definitions were used:

- Humanitarian Sector in Jordan – Programmes or projects that support the implementation of the JRP, and actors implementing these programmes or projects.

- Programmes contributing to Circular Economy - Those programmes implemented in support of the JRP (humanitarian actors) which do any of the following:
    - Minimise waste and pollution
    - Keep products and materials in use
    - Regenerate natural systems

Restorative and regenerative by design, **circularity** aims to extract the largest utility of products, components, and materials. Ultimately, the Circular Economy aims to decouple global economic development from finite resource consumption through engaging in a continuous positive development cycle that preserves and enhances natural capital. As an

[9] The SwitchMed initiative, which aims to support sustainable consumption and production practices for a circular economy in the Mediterranean is funded by the European Union, implemented by the United Nations Industrial Development Organisation (UNIDO), UNEP, the United Nations Environment Programme Mediterranean Action Plan (UNEP/MAP) and its Regional Activity Centre for Sustainable Consumption and Production (SCP/RAC).
[10] The Jordanian Sustainable Consumption and Production National Action Plan (SCP-NAP) was developed under the coordination of the Ministry of Environment in Jordan under the EU funded SwitchMed programme. The Plan is part of Jordan's efforts to achieve Agenda 2030 and the Sustainable Development Goals.
[11] The World Bank, The World Bank In Jordan, Washington, 14 June 2021
[12] Jordan Center for Strategic Studies (JCSS), *The Economy of Jordan: Post-Pandemic Scenarios* (2021). Available online.

outcome, integration of these circular designs may optimise resource yields and minimise system risks by managing finite stocks and renewable flows.

The assessment was completed in three separate phases:

- Phase one consisted of a **comprehensive analysis of secondary data** concerning the global outlook of Circular Economy in the humanitarian sector. This has informed the identification of sectors under the JRP that have the greatest potential for further incorporating circularity in their interventions.
- The second phase of research comprised the primary data collection in the form of key informant interviews (KIIs) with **national stakeholders** involved in the guidance of programming implemented under the JRP. Representatives from **key line ministries**, **implementing partners** such as UN Agencies, United Nations Country Team (UNCT), International Non-Governmental Organisations (INGOs), National Non-Governmental Organisations (NNGOs), and Civil Society Organisations (CSOs) were interviewed on the details of their programming and if, how and where they are implementing activities related to Circular Economy. Moreover, **donors,** including bi-lateral, multilateral, institutional and private foundations, were interviewed to understand their strategy regarding investments in Circular Economy in Jordan and their perspective on programming funded through their assistance. A half-day workshop with selected actors in the humanitarian sector in Jordan was also organized to discuss findings and devise a set of recommendations for humanitarian actors wanting to implement circularity in their programming.
- The third phase of the assessment included the development of this toolkit, for use by all stakeholders working in the humanitarian sector, to provide guidance for adapting their programmes towards circularity.

Key findings

Secondary data review and interviews with key informants (KIs) revealed that, among the seven sectors defined in the JRP, the areas found to have integrated most elements of circularity in their interventions were **public services; water, sanitation and hygiene (WASH); and economic empowerment**. The majority of the circular interventions identified were found to be related to **creating community awareness** about circular elements of green economy, the **management of solid waste** inside and outside refugee camps, **capacity building** of public institutions and private actors, investments in the area of **energy**, and the **treatment and reuse of wastewater**. However, stakeholder mapping revealed that programmes that include Circular Economy interventions go **beyond these areas** of intervention.

Despite the majority of stakeholders expressing a good awareness of environmental protection and integrating environmental support practices in their programming, only a **few were able to clearly outline concepts of Circular Economy** and mention a deliberate approach towards integration of circularity in their programming. However, when key-informants were given examples of interventions which contain circularity elements, they could easily match concepts of circularity with actual programmes. The lack of awareness of circularity was due to the **novelty of the concept**, which was often confused with more well-defined topics such as environmentalism.

In terms of barriers limiting circular potential in Jordan, interviews with KIs highlighted competing Government of Jordan priorities resulting in some missed opportunities especially when it comes to taking full advantage of the valuable nature of waste, such as the use of

compost from mixed municipal waste and treated sludge as fertilisers in agriculture or the reuse of treated wastewater for irrigation of a larger variety of crops. Some KIs reported a societal **reluctance to seeing waste as valuable in general**, for example, agricultural producers were reluctant to use treated wastewater on their crops due to fear that their products would be considered of lower quality, in addition to the restrictive regulations hindering such practices.[13] However, almost all KIs emphasized that **increasing community awareness** about circularity and **collaboration with the private sector** - which often has the necessary tools to invest in circularity - could provide a boost to the Circular Economy and limit the current dependence on donors.

Implementation of circularity in humanitarian programming in Jordan is also hindered by technological limitations. KIs often mentioned that **lack of technical expertise** (such as lack of environmental engineers) and technological barriers limit the implementation of circularity. This was often linked with **challenges related to funding**, as developments in Circular Economy may require large upfront investment. Nevertheless, circularity also ensures **higher long-term returns on investments** and **creating synergies between government actors, donors, and communities** could provide an impetus to circularity.

Despite Jordan's remarkable progress in making its economy greener and more sustainable, the Circular Economy is only starting to become a point of interest among the main actors in the humanitarian sector in Jordan.[14] Assessment findings revealed that **community support** is essential for the Circular Economy to gain traction, and that further awareness raising and capacity building in relevant technical areas are needed to foster the implementation of Circular Economy in the humanitarian sector.

[13] For further details of the GoJ policy regarding wastewater reuse legislation and regulations in Jordan, please consult the online resource.
[14] The World Bank Group, World Bank Supports Jordan's Green, Resilient, and Inclusive Recovery (2021). Article available online.

TOOLKIT AND ASSESSMENT METHODOLOGY

Overview

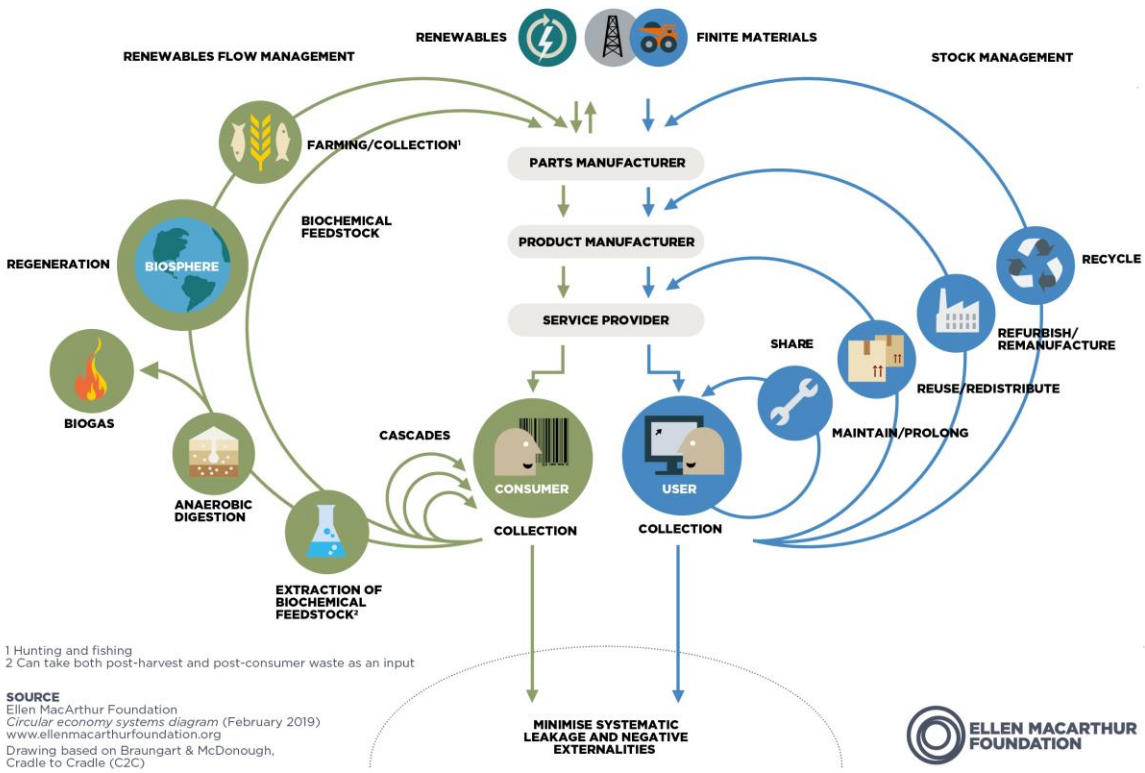
The purpose of this toolkit is to guide the humanitarian actors in Jordan on Circular Economy and act as a reference for all stakeholders who wish to identify opportunities for circularity and further integrate circularity within their strategies and programming. The toolkit incorporates global best practices for integrating circularity into aid action.

The toolkit is built around findings from the *Circular Economy in the Humanitarian Sector in Jordan* assessment designed and implemented by UNEP, ACTED and IMPACT between October and December 2021. This assessment mapped out the activities under the JRP that include elements of Circular Economy, outlined barriers to circularity implementation and analysed the impact of COVID-19, while identifying linkages with circularity within the JRP to encourage future programming.

For the purpose of the assessment and toolkit, the definitions outlined in the previous section.

The concept of circularity is illustrated in Figure 1:

Figure 1: The Circular Economy process[15]



[15] https://ellenmacarthurfoundation.org/circular-economy-diagram

Methods

Population of interest

The initial assessment focused on actors responsible for guiding humanitarian activities in Jordan under the JRP (e.g., **national stakeholders**, primarily line ministries), as well as **implementing partners** and **donors** whose activities under the JRP include one or more of the elements defining Circular Economy. All such activities being implemented in Jordan were considered (country-wide geographic scope) as a starting point for developing the toolkit. For implementing partners and donors, organisation was the unit of analysis, whereas national stakeholders, implementing partners and donors were analysed by sector. The research did not engage with affected populations directly at this stage.

Secondary data review

The toolkit builds on a comprehensive review of available secondary data on international and Jordan Circular Economy specific documents (e.g., research papers, programme documents etc. etc.) that are relevant to the topics and challenges encountered by stakeholders who implement programming with elements of circularity, to support framing of tools within the specific context of Jordan and broader global discussion on Circular Economy. This review included general resources on circularity, more specific resources developed by private actors and public institutions to guide their own organisational activities, other academic/ market research pieces and conference proceedings.

Primary data collection

Primary data from which the toolkit was developed has been collected from key informants (KIs) engaged in the implementation, funding and guiding of humanitarian activities in Jordan under the JRP. Data collection was led by IMPACT's Senior Assessment Officer (SAO) and Senior Field Manager (SFM), with support in the joint implementation of data collection and drafting products from ACTED's Appraisal, Monitoring and Evaluation Unit (AMEU). Where relevant (e.g. pre-existing relationship with critical KIs), ACTED and UNEP supported data collection activities. The KIs included:

- **National Stakeholders** involved in the guidance of programming implemented under the JRP such as representatives from key line ministries to capture the perspective of response leadership on issues related to Circular Economy in Jordan.
- **Implementing partners** such as UN Agencies, United Nations Country Team (UNCT), INGOs, NNGOs, and CSOs in order to identify the details of their programming and if/ how/ where they are implementing activities related to Circular Economy. Additionally, KIs from these organisations may have included Heads of Programmes, Technical Coordinators, Project Managers and similarly placed mid-senior management with a clear understanding of the organisations' activities.
- **Donors** including bi-lateral, multilateral, institutional and private foundations in order to understand their strategy regarding investments in Circular Economy in Jordan, their perspective on programming delivered by their implementing partners.

Analysis

Data collected through KIIs was translated from Arabic into English, when necessary, and transcribed into detailed notes. Programme documents identified through the semi-systematic review were coded in line with the key themes that were identified in the conceptual framework. Qualitative analysis was conducted using software including Atlas Ti and Microsoft Excel, and key findings were drawn based on the disaggregation identified at the outset (topics and type of stakeholders).

Challenges and limitations of the methodology

- In general, key-informants did not seem to express a prior knowledge of Circular Economy. Even though the interviewer(s) provided an extensive introduction of the concept, specific details about circularity or topics of conversation could have been lost due to insufficient awareness of Circular Economy as a term. In recognition of the early finding that the concept and considerations of environmental protection were more broadly known among KIs and in coordination with UNEP, the research team included specific questions related to environmental policies and projects as part of the tools to try and capture further elements of circularity which may otherwise not have been identified or labelled as such spontaneously by the interviewees.
- The initial outreach was addressed to a pool of organisations. However, each organisation contact assigned a representative to be interviewed based on the knowledge of the topic. As a result, the type of participants to the interviews is diverse and there could be an over-representation of KIs with specific roles (WASH specialists or KIs engaged in project-development).
- The KIIs transcripts were summaries of the discussions and did not include direct quotes. As a result, qualitative findings should not be taken as the exact statements from the participants to the interviews.
- Due to interview attrition, the assessment was not able to reach the initial target number of KIIs and is as such based on a very small sample. In order to provide an accurate picture, KIIs were conducted until data saturation was reached.[16]

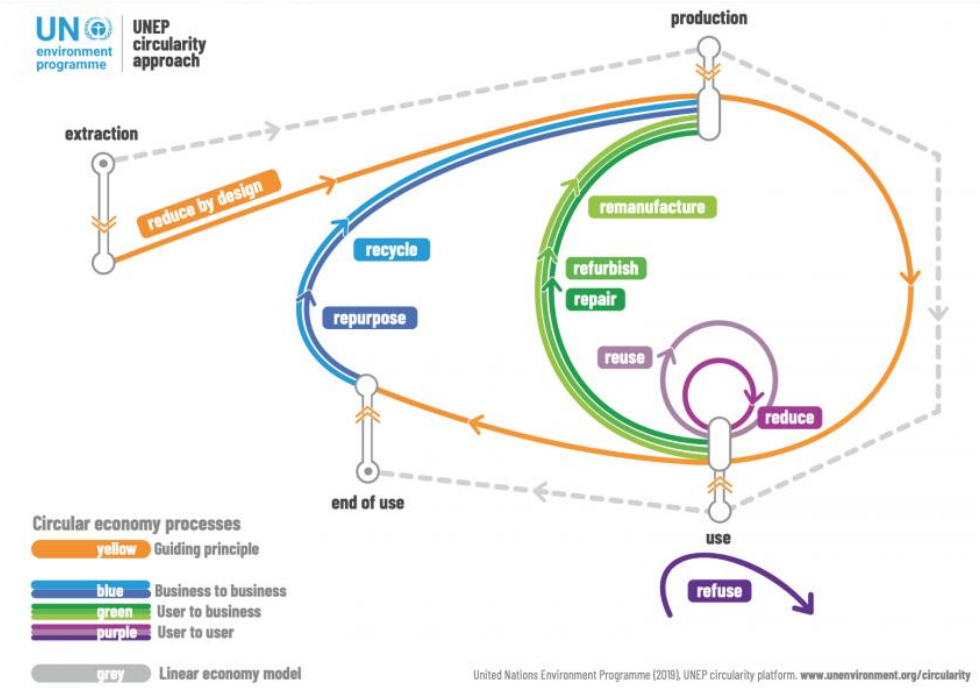
[16] Data saturation is a concept used in the qualitative research used to determine when there is adequate data from a study to develop a robust and valid understanding of the study phenomenon.

CONTENTS

Chapter 1: Outline of the Circular Economy approach

In the past years, the concept of Circular Economy has gained momentum in the public debate. According to Inger Andersen, the Executive Director of the United Nations Environmental Programme, "circularity and sustainable consumption and production are essential to deliver on every multilateral agreement, from the Sustainable Development Goals, to the Paris Agreement to the post-2020 global biodiversity framework."[17] In a world for which the end of COVID-19 pandemic does not seem in sight, these two elements become essential for recovery and increasing resilience. According to UNEP circularity approach, circularity builds on the value retention loop, as exemplified in the Figure 2 scheme below:[18]

Figure 2: The UNEP circularity approach



One of the main goals of the Circular Economy is, through its principles, to make a contribution towards the overall reduction of waste. One of the ways reduction of waste could be achieved is through the application of the 9R approach. This concept was first presented in 2017 in a white paper devising the policy of measuring innovation in the product chain.[19] Within the 9R approach, Circular Economy processes can be grouped into four categories, from the most impactful to the least impactful:

1. **Reduce by design**: reducing the amount of inputs used, particularly raw material but also unnecesarry processes, should be applied as an overall guiding principle from the earliest stages of design of products and services.

[17] UNEP (2021), Circularity to advance sustainable development. Available online.
[18] UNEP (2020), Understanding circularity. Available online.
[19] Netherlands Environmental Agency (2017), Circular economy: measuring innovation in the product chain. Available online.

2. **From a user-to-user perspective**: Refuse, Reduce and Reuse.

3. **From a user-to-business intermediary perspective**: Repair, Refurbish and Remanufacture.

4. **From business-to-business**: Repurpose and Recycle.

Table 1: The application of the Circular Economy 9R principles with examples from humanitarian sector

Reduce by design

In the **reducing by design principle**, high impact can be achieved through minimising the extraction of raw materials and overall consumption of materials as well as waste generation induced throughout the lifecycle of a product or a service. In practice, the principle instructs the implementers to develop strategies that focus on what is most important in the service or product as of the design phase, while trying to minimise the unrecovered externalities.

In the humanitarian sector, reducing by design could be linked to making interventions to the end users, beneficiaries, as simple and straightforward as possible through the simplification of bureaucracy and limitation of resource use in the aid delivery process. For instance, UNHCR's mobile wallet technology in Jordan simplified the authentication of beneficiaries to be done through iris scan, a safe, easy and effective method to distribute cash assistance to refugees in comparison to the more traditional humanitarian cash distribution on site.[20] In addition, optimising packaging of aid items (such as food or non-food) to shift from wasteful non-recyclable products to using either biodegradable or easily recyclable items should be considered as of the design, planning and procurement phases. Options may include preferring minimal packaging and eco-friendly options (e.g., compostable, biodegradable, reusable). Procurement of goods and services supporting project delivery can also integrate this principle by weighting in considerations of energy and resource use as well as waste generation.

Refuse, Reduce, Reuse

The refuse, reuse and reduce principles have at their core the idea that organisations can actively reduce the volume of waste and the environmental impact of their activities through applying the refusal to produce waste, reducing the waste produced and reusing the inputs throughout the process.

Refusing to use inputs or materials is part of a more sustainable approach. Implementers can make a conscious decision of buying or procuring less goods or services, that may be either unnecessary (such as "goodies") or for which reusable alternatives exist (such as higher quality visibility materials which can be re-used across multiple activities and/or projects). Refusing to purchase items including specific hazardous substances or requiring the use of scarce raw materials also contributes to this objective. Donors can also support the transition by considering this principle in their policies and guidelines.

Reducing the impact of your organisation's footprint is linked to reducing the use of harmful, wasteful or non-recyclable materials in order to save money, help the environment, and ultimately produce less landfill-bound solid waste.

[20] United Nations High Commissioner for Refugees (UNHCR) (2019), United Nations High Commissioner for Refugees. Available online.

Reusing is a relevant approach when the use of non-recyclable materials cannot be avoided. Instead of throwing it away, a plastic bottle can be refilled or used in a different economic process.

In the humanitarian sector, while safety standards must be ensured, organisations can engage in reducing their environmental footprint. The Norwegian Refugee Council (NRC) through its "Greening the Orange Programme" aims to reduce the environmental footprint of their programming through reducing the emissions and improving the waste management in its humanitarian operations.[21] For example in Bangladesh, the organisation is looking at options to reuse plastic waste as raw input to produce shelter materials such as panel bricks and roofs needed for refugees' shelters in Cox Bazar.

Repair, Refurbish, Remanufacture[22]

Repairing refers to the fixing of a specified fault in an object and/or replacing defective components, in order to make the object a fully functional product to be used for its originally intended purpose. Repair extends the product lifetime, for example by replacing broken parts, or removing defects.

Refurbishing refers to the modification of an object that is a waste or a product to increase or restore performance and/ or functionality or to meet applicable technical standards or regulatory requirements, with the result of making a fully functional product to be used for a purpose that is at least the one that was originally intended.[23] It also refers to the preventative maintenance system, such as replacing parts that are worn but still functional with new or better ones in order to bring it back to original or better condition and extend its useable life span.

Remanufacturing a product, on the other hand, takes place in an organised manner, mostly in an industrial or a factory setting, in which parts of the whole of the product are restored to same-as-new, or better condition and performance. The process decreases the environmental impact and the cost for the producer.

For implementing organisations, repairing assets (such as cars) is an effective way to prolong their useful life while avoiding to purchase new ones when possible. In a humanitarian setting, where most of the products aimed at beneficiaries have single-use capacity, the logistics involved in repairing, refurbishing or remanufacturing such a product could pose additional costs to the organisation. However, indirectly, there are instances where donors have provided assistance to refugees aimed to support the repairing of shelter, such as the European Union (EU) and United Nations Relief and Works Agency for Palestine Refugees in the Near East (UNRWA) support for Palestinian refugee families impact by the hostilities in May 2021.[24]

Repurpose, Recycle

Repurposing an item which is at the latest stages of the product life when the usage of the product becomes obsolete and there is little possibility of repairing. This method is called upcycling, which involves the "creative" change in the original intent of the product that is at the end-of-life for different purposes.

[21] Norwegian Refugee Council (NRC) (2021), Greening the Orange: the path towards a greener NRC. Available online.
[22] UNEP's definition of circularity. Available online.
[23] Definition as per UNEP's Basel Convention UNEP/CHW.13/4/Add.2. Available online.
[24] The United Nations Relief and Works Agency for Palestine Refugees in the Near East (UNRWA) (2021), Gaza: EU and UNRWA support Palestine refugees with cash and shelter repairs. Available online.

Recycling is the last-resort component of Circular Economy and should be used only when the other options have been depleted. Recycling involves the process of waste, but the high energy costs involved makes recycling not a priority from the circular point of view.

In the humanitarian sector (and in society in general), repurposing items has been an effective way to cover for the shortcomings in funds in programming, minimise waste and take advantage of the skills of beneficiaries. A very good example is represented by the NRC workshop in Za'atari camp in Jordan[25], which repairs various damaged or not needed anymore items or finds new alternative uses for them. This includes repurposing used / no longer in use emergency tents and tents' materials throug upcycling into children playground items used at the organisation's daycare centre. Similarly, Oxfam initiated the Lel-Haya (For Life) project in the camp which built the sewing capacities of Syrian refugee women by allowing them to upcycle old UNHCR tents and turn them into reusable bags sold for income generation.[26]

[25] Reliefweb,(2014), NRC finds innovative ways to support refugees in Zaatari camp. Available online.
[26] Oxfam, Life in Za'atari, the largest Syrian refugee camp in the world. Available online.

Chapter 2: Comparing linear economy and Circular Economy

The Circular Economy proposes a new economic model in which value creation is enhanced through "closing the circle", which involves minimising extraction of finite resources and ensuring that materials and products are recovered and regenerated at the end of their use-life. [27] In a classic linear model, the economy follows the "take-make-dispose" model, in which value is created by producing, selling and consuming as much as possible, with products being disposed of at the end of their life cycle. The linear model entails consumption of large quantities of materials and energy.

The linear model is frequently resorted to as default by the humanitarian sector especially in the initial phases of the emergency, when the health security, accessibility, and long-shelf life must be ensured to aid distributions. However, the use of excessive resources, exemplified here thorough the excessive use of plastic, has been a major concern in the humanitarian sector[28] and, as the crises progress towards protracted phases, Circular Economy could be an alternative for the minimisation of waste production.

Anna Maria Liwac, from the International Committee of the Red Cross mentioned in a conference proceeding how the ICRC is engaging with the use of plastic through multiple programmes targeting:[29]

- Plastic waste prevention & management
- Packaging reduction & optimisation
- Packaging recycling
- Product eco-design & quality assurance
- Assistance programmes & Circular Economy
- Sustainable alternatives & end of life management

Various examples, funded by Innovation Norway, address the single use of resources through humanitarian interventions, all presented in the Addressing plastic pollution in humanitarian operations through innovation partnerships conference led by Geneva Environmental Network in 2021:

Camp+ | Care: in a refugee camp in Uganda, Care developed a solution to repurpose and refurbish plastic waste into products which are sold into the market for household use, farming or as construction materials. A small-scale solar powered unit allows plastic to be transformed into new products.[30]

Waste for Warmth | Engineers Without Borders: A partnership between The Polyfloss Factory, Field Ready, and Engineers without Borders Norway built a small and field-friendly machine which transforms plastic waste into shelter insulation products, reducing the fuel consumption for heating at 40% in a refugee camp in Turkey.[31]

Recycling of Solar Waste in Refugee Settings | IOM: Under the "Greening humanitarian responses through recovery, repair, and recycling of solar products in displacement settings" addresses the e-waste produced by the inadequate disposal of solar products in humanitarian

[27] Stefanakiis AI, Nikolaou I (2021) Circular economy and sustainability, Volume 1. Elsevier Publishing
[28] Geneva Environmental Network (2021), Addressing plastic pollution in humanitarian operations through innovation partnerships. Available online.
[29] Ibid.
[30] CARE Network (2021), The world's first sustainable refugee camp. Available online.
[31] Field Ready (2021), Waste For Warmth: keeping out the cold with plastic. Available online.

settings. The project assesses the perceptions of stakeholders and researches on potential barriers and opportunities for innovation.[32]

Polypropylene Bags: Design, Field Testing and Scaling up of an Alternative Material: Implemented by ICRC, WFP, and UNHCR, the project aims to develop sustainable alternatives to polypropylene (PB) bags which are commonly used as packaging for food, commodities and basic relief items. Notably, the research focuses on the essential task of meeting the technical specifications, as well as social, economic and environmental criteria. After developing solutions, three alternatives will be tested in the field.[33]

Plastic in Refugee Settings: from Waste to Value | UNHCR: The project is implemented in the Sahrawi refugee camps, where more than 1700 tons of plastic waste is generated per year. The project focuses on upcycling and transforms plastic into furtniture, thus substituting wood.[34]

[32] UNHCR (2021), Greening humanitarian response through recovery, repair and recycling of solar products in camps. Available online.
[33] Geneva Environmental Network (2021), Addressing plastic pollution in humanitarian operations through innovation partnerships. Available online.
[34] NGI News (2020), Plastic waste in refugee camps may turn into building materials. Available online.

Chapter 3: Circular Economy case-studies in Jordan

In the context of a protracted mass scaled displacement crisis like the Syrian Refugee Crisis in a middle-income country like Jordan, refugee's access to immediate income and nutrition shifts to a question about food security, livelihoods and the sustainability of the humanitarian response. The Jordan Response Plan (JRP), under its Economic Empowerment Sector section, aims to address food security in tandem with livelihoods projects in sustainable agriculture and livestock farming, creating sustainable jobs and stimulating economic growth. The Public Services sector of the JRP looks at challenges and opportunities for inclusive service provision - such as waste collection, wastewater management, transport and energy - to both Syrian refugees and host communities in a context where the crisis has become protracted. Under the WASH sector, the Plan highlights the opportunities to foster the humanitarian-development nexus with solutions serving both the camps and surrounding areas, in a country famously affected by water scarcity. This approach creates the opportunity for elements of circularity by **keeping materials in use** through investing in sustainable livelihood opportunities and improving public service delivery, **regenerating natural systems** through investing in regenerative agriculture and innovative water conservation, management and reuse practices, and **minimising waste and pollution** by addressing issues at the local level, through supporting local markets and communities, which decreases transportation pollution, packaging waste, and unsustainable practices. These considerations show the necessity of integrating cross cutting CE across all sectors of the humanitarian response.

Small scale initiatives

This case study will look at three small scale initiatives (that have the potential to scale up) which integrate economic and environmental circularity in larger projects addressing food security, livelihoods and water access challenges:

1. **Action Against Hunger's (ACF)** Swiss Agency for Development and Cooperation-funded agricultural and water optimization programme aiming to increase the resilience and water-use optimization for Syrians and Jordanians, in North Jordan.
2. **The Norwegian Refugee Council's (NRC)** own-funded hydroponic farming system in Azraq Camp to support new arrivals' food security.
3. **ACTED's** Bureau of Population, Refugees, and Migration (BPRM) funded project to create sustainable work opportunities for Jordanian and Syrian farmers through the promotion of climate smart agriculture and hydroponic agriculture.

Action Against Hunger (ACF)

Action Against Hunger's project *Resilience and Water Optimization* in the communities hosting Syrian refugees and vulnerable Jordanians was co-funded by the Swiss Agency for

Development and Cooperation (SDC). This project aimed towards three intervention outcomes:

1. Reducing freshwater use at home through the adaptation of water saving technologies including rehabilitation of water connection systems;
2. Improving water conservation practices at home through awareness raising;
3. Establishing home gardens for household-level food production through climate smart agriculture (CSA) practices.

The Resilience and Water Optimization project implemented the pilot installation of 13 grey water units (with reuse potential) for 24 households, and rehabilitation of two small water supply infrastructures in communities benefiting approximately 343 households. ACF's project incorporated elements of circularity through **minimising waste and pollution** by helping vulnerable communities grow their own food to meet their household's need using climate-sensitive approaches, installing household-level water saving devices and raising beneficiaries' awareness about water conservation and **keeping products and materials in use** by raising awareness about recycling, and piloting reuse systems. Such circular initiatives have the ability to sustain the benefits of the initial investment after the implementation ends.

In the home gardens, ACF assessed the garden space of each household to select the best crops for their location and conditions and provided beneficiaries with CSA training and kits for them to start producing fruits and vegetables for home consumption. This intervention helped 100 home gardeners to increase their own food security, giving them the tools to become more independent in the long term. Some beneficiaries even expanded out of their home gardens to vacant lots in their neighbourhoods, multiplying the impact at society level.

The Norwegian Refugee Council (NRC)

In light of increased the risk of food insecurity for vulnerable populations, partly due to the effects of the COVID-19 pandemic crisis, NRC's hydroponic system initiative in Azraq camp, built using recycled and repurposed (from previous projects or activities) construction materials, allowed for the provision of supplemental food assistance, without requiring significant land, labour or capital investment. As the hard soil and saline water in the Azraq area makes it hard to grow crops directly in the soil, NRC looked at piloting the use of deep-water culture and Nutrient film technique (NFT) systems to **grow eight crops as 'top up' items, supplementing traditional food assistance** products.

The approach succeeded in producing food items that complemented the distributed welcome meals to 706 beneficiaries. By piloting hydroponic farming in the camp reception area, NRC has developed a solution to help overcome challenges related to the local climate (including water scarcity) and socio-economic challenges faced by vulnerable populations at risk of food insecurity. This project successfully incorporated elements of circularity by **repurposing existing products and materials**, while providing a more sustainable method to produce crops through the decrease of the use of water, in an area where the climate and the circumstances do not support traditional farming methods.

ACTED

ACTED's BPRM-funded 2-years project *Providing sustainable work opportunities to refugees and vulnerable Jordanians in the agricultural sector in Jordan* is funded aimed at improving

access to agricultural livelihood opportunities for 534 Syrian refugees and 477 vulnerable Jordanians and their dependents (5,515 indirect beneficiaries), as well as nine established agricultural cooperatives (including 450 members) in Mafraq, Irbid and Balqa governorates.

Through this project, ACTED supported beneficiaries with training on sustainable, regenerative and/or innovative agricultural practices including hydroponic farming, permaculture, azolla production (as livestock alternative feed supplement), sustainable livestock farming, and beekeeping. The project awarded individuals and cooperatives with grants to further support targeted agricultural microbusinesses' development and access to markets, aiming to make these activities economically sustainable after the direct implementation ends.

Additionally, ACTED held a two-days experience exchange between experts and institutional actors in Jordan on topics related to ecosystem resilience and regeneration (including forestry and grassland management, climate change and carbon sequestration), contributing to further developing a community of practices around circularity.

The project integrates elements of circularity through practices and skills aimed at **regenerating natural systems** and **keeping materials and resources in use** by supporting small farmers with innovative, climate smart and regenerative agricultural approaches.

Further development opportunities

Actors like ACF, ACTED, and the NRC, sought to increase the sustainability and impact of the projects within their mandate by integrating Circular Economy approaches. Although circularity was not the driving concept of each of the projects highlighted above, integrating elements of circularity in each project allowed for greater hopes that the results will remain sustainable in the longer term, while making the most out of scarce economic and natural resources. In a humanitarian crisis, where the focus is on saving lives, considering circularity as a framework through which to plan interventions is not typically a top priority. However, when looking at the economic sustainability of longer-term circular investments in the case of a protracted humanitarian crisis with rapidly decreasing funding, the benefits of such approaches are clearly seen.

Large scale initiatives: Successfully closing the loop for circularity

In-camp circular approaches: the FAO example in Za'atari

The Food and Agriculture Organisation of the United Nations (FAO) has been running an innovative circular project in Za'atari refugee camp with the objective to *improve rural livelihoods and the environment through the integral utilization of residues of treated wastewater and organic solid waste for the production of renewable energy and compost in Mafraq governorate of Jordan.* The project was implemented in partnership with the Ministry of Agriculture (MoA), with a budget of 3.3 million dollars (co-funded by the European Union and FAO). The partnership and close collaboration with the National Agricultural Research Centre (NARC) and National Energy Research Centre (NERC) for research and training purposes was also a key element of this circular project. The project was implemented between 2017 through the summer of 2021 and is benefiting from a one-year expansion. This flagship initiative demonstrates how a full Circular Economy model can be implemented in a refugee camp, turning waste produced by camp residents into valuable raw materials and energy.

The project repurposes the 16 tons of mixed municipal solid waste produced daily in Za'atari and collected by Oxfam to produce clean energy. The collected solid waste is delivered to FAO's in-camp manual recovery facility for sorting, which is performed by 34 female and 27 male refugees who are directly benefiting from income-generating opportunities created by

the project. The refugee workers sort the plastic and metal waste, which is handed back to Oxfam for recycling. The remaining organic waste is then transformed into compost at the in-camp facility which can be used later in the enrichment of forests and pastures and the production of forest seedlings. This approach aims to alleviate the environmental and sanitary impact imposed by accumulated waste in landfill on surrounding host communities, since the project reduces up to 25% of added waste to landfills. Moreover, the waste treatment facility in the camp effectively contributes to limiting CO_2 emissions and decreasing transportation costs.

Additionally, the project takes benefit from the value of the sludge resulting from the wastewater treatment. Sludge is known for causing critical environmental challenges, including the risk of nutrient leaching, impacts on soil biodiversity and greenhouse gas emissions[35] yet the project turns such challenges into an opportunity. It does so by mixing the sludge with organic materials, extracted from solid waste sorting. This mixture is then used as raw materials that feed the existing biogas plant, constituting a renewable energy resource. The treated water resulting from the wastewater treatment process can be re-used to irrigate agricultural projects.

The one-year expansion of the project builds on initial results and looks at further expanding the circular impact by re-using the compost and water from the project in tree nurseries to fertilize seedlings which can contribute to the restoration of forests and rangelands in Jordan.

Figure 3: Application of Circularity in the FAO Programme in Za'atari Camp[36]

Challenges and Opportunities

As a research pilot, the Za'atari biogas plant only generates 51 kWh of energy per day used to power the pump extracting the recycled water from the wastewater treatment plant, but the plant does not have the capacity to generate power for the whole camp. However, based on

[35] The European Union (na), Environmental, economic and social impacts of the use of sewage sludge on land. Available online.
[36] Visual created by the IMPACT/ACTED research team, for indicative purposes only.

its excellent results and demonstrated viability, this successful pilot project received further financial support from the EU (European Union) to be scaled up by GIZ.

Governmental priorities in Jordan - which prohibit the use of biosolids (treated sludge) as well as compost from mixed municipal waste in the agricultural sector - have posed some impediments to the pilot's Circular Economy approach. However, progress has been made on this front thanks to evidence-based research and continuous stakeholders' engagement, allowing to reach a consensus with Ministry of Agriculture (MoA), Ministry of Environment (MoEnv), and Ministry of Water and Irrigation (MWI) who are now working at a technical level to update existing standards for the incorporation of treated wastewater in agriculture.

By transforming waste from Za'atari camp into valuable raw materials and energy while simultaneously alleviating the pressure on host community's landfills, this project demonstrated the feasible and positive spillovers of **fully closing the environmental and economic loop.** The project's efforts and achievements both on the ground and at technical and policy levels have also consolidated the collaboration among a network of stakeholders - residents of Za'atari Camp, NGOs, UN agencies and government actors (both at the regulatory and research levels) - highlighting the inevitable necessity of a multilateral approach to achieve circularity in humanitarian contexts.

FAO believes that this project is the first fully circular model in a refugee camp and hopes to replicate it in other countries experiencing similar humanitarian challenges. If systematized, the model has the potential to support the humanitarian response - in camp and out-of-camp settings - by contributing to economic sustainability while decreasing the environmental impact on ecosystems and communities.

The success of this project in utilizing households' waste for productive means features as a game changing model for other contexts of mass/protracted displacements, where investments in refugee camps can elevate the standard of living for refugees, contribute to the overall wellbeing of the host community and safeguard the environment.

Chapter 4: Incorporating Circular Economy in the JRP's key sectors

Further integrating Circular Economy initiatives into key sectors of the Jordan Response Plan (JRP) could help building resilience of refugees and vulnerable Jordanians while at the same time helping create more sustainable solutions to alleviate the Syria crisis impact on Jordan. As presented in this chapter, the humanitarian-development nexus could help increase the likelihood of successful projects for all stakeholders and multiply the impact of humanitarian interventions. Secondary data review and interviews with key informants conducted as part of the Circular Economy Assessment in the Humanitarian Sector in Jordan revealed that, among the seven sectors defined in the JRP, the main areas found to have already integrated elements of circularity in their interventions were public services; water, sanitation and hygiene (WASH); and economic empowerment, although elements of circularity were found across programmes with a wider sectoral reach. Looking at those three key sectors, - WASH, Economic empowerment and public service delivery - the Circular Economy model provides a cross cutting path to address each concern. This chapter is structured through a sector-by-sector analysis observed through the lens of the three main elements of Circular Economy (minimise waste, keep materials in use, regenerate natural systems).

WASH

One of Jordan's environmental challenges is water scarcity, which is a result of a combination of climate change, increased water use due to growth in population and agriculture, geo-politics, and non-revenue water (water lost in leaky pipes, illegal connections, and meter losses).[37] As one of the most water scarce countries in the world, integrating elements of Circular Economy in the WASH sector could allow Jordan to conserve water and protect current reserves, turning it from waste to a valuable raw material while creating green jobs in the process.

Minimising waste: WASH related investments in Jordan's water network could positively impact the water wastage derived from high level of non-revenue water (NRW). Additionally, investments in WASH infrastructure in places such as Azraq refugee camp, for example, would alleviate what is now a decade of water trucking. Implementing partners can increase the adaptation of water saving devices which decreases the volume of water that comes out of the tap; these devices have shown significant reductions in water use that can, on average, reach up to 30 of the total domestic demand.[38]

Keeping materials in use: To keep water in use, various projects treat wastewater, which is a process that allows the water to be reused for some types of irrigation. On a large scale, increasing the capacity to test and monitor treated wastewater would expand the potential for the reuse of water in agriculture in a safe way. Increased use of treated wastewater instead of virgin water for crop irrigation would help Jordan preserve the limited resources of the country. This would allow farmers to increase crop production in a safe way, mitigating environmental degradation. On a smaller scale, implementing partners can create household level water reuse systems.

Restoring natural systems: The process of wastewater treatment generates treated wastewater as well as treated bio sludge, which can be used to make high quality compost. Such compost has the potential to restore natural systems by fertilizing the ground.

[37] Nature (2019), A land without water: the scramble to stop Jordan from running dry. Available online.
[38] Inman and Jeffrey, 2006; Renwick and Archibald, 1998.

Economic Empowerment

Another challenge that Jordan is facing is the increasingly high unemployment rate, which spiked even more as a result of the COVID-19 pandemic. The livelihood sector is one example of the cross-cutting scopes of Circular Economy. The humanitarian livelihood assistance aims to help people recover from disaster by giving them tools, training, and financial help to rebuild their livelihoods. Livelihood investments have the potential to promote circularity, as circular initiatives can yield economic opportunities for the most vulnerable, in turn promoting social justice through equal access to jobs.

Minimising waste: Solid waste management (SWM) provides an opportunity for the Circular Economy to stand out. One component of SWM interventions is linked to cash-for-work (CfW) projects, which currently help fill an important gap in immediate income for vulnerable Jordanians and Syrians. CfW solid waste management projects contribute to minimising waste in local governorates through contributing to waste sorting and recovery initiatives. While these SWM projects are addressing livelihoods issues by providing short term income-generating opportunities and the development of local public services that help minimise the waste ending up in landfill, these initiatives are unfortunately reliant on a constant cash infusion making them economically unsustainable and uncircular. To increase the long-term sustainability of waste sorting (to minimize waste ending in landfills and increase recycling rates), humanitarian initiatives can further incorporate elements of Circular Economy in these SWM projects, helping the sector transition towards sustainable green jobs involving recycling, reusing, and upcycling wasted materials, turning them into valuable outputs. These Circular Economy investments can include capacity building/ training of the vulnerable workers and relevant stakeholders, in addition to investing in more efficient technological solutions that can allow facilities to scale up and become more profitable, in turn enabling them to provide economically sustainable green jobs in the economy. These green jobs would be a result of the increased quality of sorted waste making it more valuable and more likely to be sold and used as a raw material. In addition, these activities would be self-sustaining economically and would decrease the waste that ends up in landfills in the current system.

Keeping products and materials in use: The agricultural sector in Jordan continues to face the impact of climate change. These environmental issues have driven some farmers into debt and in some cases created conditions where farmers cannot financially sustain their farms. The humanitarian sector can support the livelihood sector to keep materials in use by helping vulnerable farmers adapt to climate change with climate smart agriculture, such as hydroponic farming or greenhouse farming. These adaptive agricultural practices have the potential to boost livelihoods for farmers, allowing them to increase production while decreasing material inputs. These investments in the agricultural sector help address both the circular necessity of the agricultural impact on the environment and the farmers impact on the local economy, making both more sustainable. Multiple sectors offer opportunities for keeping products and materials in use, for example through re-use, repair and re-purposing schemes that can be implemented in both in- and out-of-camp settings. Oxfam's and NRC's repair and repurposing initiatives in Za'atari for example (described under Chapter 1) contributed to building the skills of and providing income-generation for vulnerable individuals, all the while addressing the need for new items or structures in a resource-scarce environment. Another example is of the Lebanese social enterprise Fabric Aid which tackles the second-hand clothing market through a circular approach, diverting large amounts of recoverable textile from landfills while providing affordable products for marginalised individuals and skills and job opportunities in the upcycling sector.

Regenerate natural systems: The Circular Economy proposes an alternative model for the regeneration of agricultural systems through minimising the number of external inputs for agricultural production, closing nutrient loops, and reducing the impact on the environment of the agricultural practices. The use of circularity in agriculture, and livelihoods in general, can increase agricultural outputs. The humanitarian sector can support regenerative agricultural practices contributing to a better environment and reduced negative impact of climate change on vulnerable individuals.

Public Services

Integrating elements of Circular Economy into public services in Jordan has the potential to support long term green development in Jordan while addressing today's pressing issues such as energy production, waste management, and the preservation of the natural resources. Circular economic investments in the public sector in Jordan can help the country continue to deal with the protracted refugee crisis while supporting national priorities of sustainable development.

Minimising waste: Beyond the water element of treated wastewater, the other by-product is the waste sludge which when treated, has the potential to be transformed into biofuel and organic compost. Humanitarian programming in Jordan has shown the potential for scaling up the use of biogas as a clean and renewable energy. This process takes a waste material which, without such an intervention would end up in a landfill and turns it into a valuable raw and clean material. Stakeholders investing in biogas plants in Jordan could also direct their investments into the resilience of the electric grid, to increase the use and the benefits of green energy while adapting to increasing population. Such initiatives design out waste from the bio sludge and waste from non-renewable energy creating a circular loop from waste to green energy.

Keeping materials in use: The greatest potential for keeping materials in use in the public sector is related to solid waste management. Due to a lack of waste sorting at source and reliance on human waste sorting, mass amounts of recoverable waste are lost to landfills. All investments in SWM that contribute to the increased quality of sorted waste in addition to waste recovery streams (like glass, plastics, paper) can help the public sector turn waste material into valuable materials. Engagement of a large panel of stakeholders through partnerships and networks is also key to achieving a circular model (such as linking entities dealing with waste to buyers including through relevant digital platforms). At the community level, further sensitizing individuals to the added value of reusing items (as opposed to resorting to single-use) holds potential for increased consumer-level circularity (e.g., using glass jars instead of plastic, fabric bags instead of plastic bags, reusing products inside own home and garden…).

Regenerating natural systems: The public sector can have a substantial impact in regenerating natural system through its role of devising policies in the agricultural, water, energy and environmental sectors. Various initiatives, led by the government and non-governmental organisations, engage in nature regeneration practices, such as: regenerative agriculture, waste reuse and recycling, water protection, all of which provide a long-term perspective for environmental regeneration in Jordan. Conducive and adequate policies and regulations in relevant sectors – including water management, waste management, agriculture - are paramount to support these initiatives and achieve greater circularity.

Chapter 5: Circular Economy self-assessment tools for humanitarian sector

This chapter includes two tools designed to support humanitarian actors in gaining a general understanding of their contribution to circularity, including identifying possible areas for improvement. Specifically, this chapter contains:

1- a tentative **circularity marker,** to be used by organisations looking for a quick assessment of a project or programme being designed or implemented in terms of circularity. This tool is purposively broad so it can be used by different types of actors (national stakeholders, implementing partners, donors), at various stages of the project cycle (design, contracting, implementation or closing) and at different scales (from the more micro, such as project activity, to the broader organisational level) depending on the actors' needs. It may be used where circularity is a rather new consideration for the organisation or programme, and limited time is available to assess it.

2- a **checklist** to support implementing organisations' own assessment of the degree of circularity achieved in their activities, per sector of the Jordan Response Plan (JRP). This tool aims more specifically to support implementers looking to conduct a thorough assessment of their activities or a given programme or project against circular practices. The tool provides guidance for such self-assessment and identification of gaps and opportunities in circularity. The tool also enables the development of an action plan to address the identified gaps/needs, and tracking progress against set goals.

While a scoring approach is provided along with both tools, the main objectives of the marker and checklist are to guide stakeholders in identifying existing contributions to circularity as well as potential for added impact rather than "distributing points" to projects, programmes or actors. These tools primarily aim to guide humanitarian actors in the process of applying circular concepts to the "real world" they operate in, identifying already-implemented practices which contribute to circularity, and opportunities to foster these practices and/or develop new ones that are feasible and relevant in their specific context of operations.

Circularity marker

The proposed Circular Economy in the Humanitarian Sector Marker assesses the extent to which a humanitarian project or programme has a circular approach in design and implementation. Taking into account the complexity of the humanitarian response, the scoring tool acts as a guiding document rather than being an accurate tool to assess circularity and should be taken as a reference only. The tool is inspired by The Circular Economy Toolkit developed by Jamie Evans and coordinated by Dr. Nancy Bocken of Institute for Manufacturing (IfM), University of Cambridge, which includes a self-assessment tool and is designed to support private sectors entities in capturing and assessing circularity in their current product design and business operations. The original tool can be consulted on its dedicated website. This simplified marker is designed to facilitate humanitarian organisations' own assessment of their contributions to circularity, and can be used as of the early project design stages. It may also be used by the donors as a guiding document for example when evaluating funding requests. Based on the findings of the Circular Economy Assessment in the Humanitarian Sector in Jordan, the tool adopts a broad-looking perspective which aims to capture *contributions towards circularity*, rather than focusing on only identifying programmes *targeted at* Circular Economy or aimed at closing the loop of resources' flows.

The proposed scoring system includes the following four categories:

Category of Circularity	Expanded definition
1-No contribution to circularity	Elements of circularity are marginally incorporated in the project or programme or not at all considered.
2-Limited contribution to circularity	The project or programme addresses some components of circularity but does not implement a circular approach nor a significant contribution to circularity efforts.
3-Significant contribution to circularity	The project or programme incorporates strong elements of circularity, including significant contribution to one or more of the principles of 1/ Minimising waste and pollution; 2/ Keeping products and materials in use; 3/ Regenerating natural systems
4-Principal contribution to circularity	The project or programme's main objective is designed to implement a circular model or approach in one or more of the principles of 1/ Minimising waste and pollution; 2/ Keeping products and materials in use; 3/ Regenerating natural systems

This scoring tool is especially designed to be used by organisations looking at a quick assessment of a project or programme being designed or implemented, to gain a general understanding of their contribution to circularity. Organisations may refer to the annexed detailed "Checklist" and other sections of this toolkit for recommendations, examples and ways forward to change their scoring category, or further build on newly identified opportunities. Furthermore, organisations are welcome to adapt the scoring and tool to their specific activities or needs.

1. Organisation takes advantage as much as possible of saving materials* or has a dematerialised or digitalised approach:

   **Think of the materials that feed directly into the project or programme (such as distributed commodities) as well as materials that support day-to-day operations (such as office supplies).*

   ☐ Yes, fully
   ☐ Yes, partially
   ☐ No
   ☐ I do not know
   ☐ N/A

2. Materials used in the organisation's activities are biodegradable, compostable or easily recyclable

   ☐ Yes, fully
   ☐ Yes, partially
   ☐ No
   ☐ I do not know
   ☐ N/A

3. Organisation takes active approach in encouraging recycling in the programming, including networking and partnering with relevant entities

- ☐ Yes, fully
- ☐ Yes, partially
- ☐ No
- ☐ I do not know
- ☐ N/A

4. Organisation tries to source locally the inputs as much as possible

- ☐ Yes, fully
- ☐ Yes, partially
- ☐ No
- ☐ I do not know
- ☐ N/A

5. Organisation's activities are eco-efficient** (low energy consumption and carbon emissions, quality of products is considered in relation to externalities/waste)

   ***While the sector is used to considering cost-efficiency, externalities and resource consumption associated with humanitarian activities should be looked at as well. Eco-efficiency is based on the concept of achieving more while using fewer resources and creating less waste and pollution. Emissions can especially be tracked through logistical and procurement aspects of an organisation's operations.*

- ☐ Yes, fully
- ☐ Yes, partially
- ☐ No
- ☐ I do not know
- ☐ N/A

6. Organisation considers the carbon footprint associated with its activities (measuring and/or compensating and/or reducing carbon emissions)

- ☐ Yes, fully
- ☐ Yes, partially
- ☐ No
- ☐ I do not know
- ☐ N/A

7. Organisation does not engage with toxic materials

- ☐ Yes, fully
- ☐ Yes, partially
- ☐ No
- ☐ I do not know
- ☐ N/A

8. Organisation tries as much as possible to re-use waste as input, including networking and partnering with relevant entities

- ☐ Yes, fully
- ☐ Yes, partially
- ☐ No
- ☐ I do not know
- ☐ N/A

9. Organisation considers sustainability aspects in its activities

   This includes providing an exit strategy for the activities, and investing in community ownership for sustainability where possible, as well as localisation options.

   - ☐ Yes, fully
   - ☐ Yes, partially
   - ☐ No
   - ☐ I do not know
   - ☐ N/A

10. For the activities containing distribution of items, the items are not single-use (if non-perishable) or their lifetime is optimised (if perishable)

    - ☐ Yes, fully
    - ☐ Yes, partially
    - ☐ No
    - ☐ I do not know
    - ☐ N/A

11. For activities containing distribution of items, items use the minimum of resources (raw material and energy) to be produced

    - ☐ Yes, fully
    - ☐ Yes, partially
    - ☐ No
    - ☐ I do not know
    - ☐ N/A

12. For activities containing distribution of items, cost of repairing the item is less than the cost of buying one new

    - ☐ Yes, fully
    - ☐ Yes, partially
    - ☐ No
    - ☐ I do not know
    - ☐ N/A

13. For activities containing distribution of items, beneficiaries are provided the option for repairing, servicing or replacing the product in case of damage

    - ☐ Yes, fully
    - ☐ Yes, partially
    - ☐ No

☐ I do not know
☐ N/A

14. For activities containing distribution of items, the item can be recycled or refurbished at the end of its end life

☐ Yes, fully
☐ Yes, partially
☐ No
☐ I do not know
☐ N/A

Scoring grid (to be filled once self-assessment is fully completed):

1- Occurrences of "yes fully" (sum)	2- Occurrences of "yes partially" (sum)	3- Occurrences of "no" and "do not know" (sum)	4- Occurrences of "N/A" (sum)	5-Total answers excluding "N/A" (sum of columns 1, 2 and 3)	% of "yes fully" out of total answers (col. 1 ÷ col. 5)	% of "yes partially" out of total answers (col. 2 ÷ col. 5)	Sum of % "yes fully" and "yes partially"

Interpretation of Score:

Score	Circularity marker
Sum of % "yes fully" and "yes partially" represent under 30% of the final score	1-No contribution to circularity
Sum of % "yes fully" and "yes partially" represent between 30% and 60% of the final score	2-Limited contribution to circularity
Sum of % "yes fully" and "yes partially" represent 60% or over of the final score	3-Significant contribution to circularity
% of "yes fully" represent 70% or over of the final score	4-Principal contribution to circularity

Please refer to the introductory paragraph for the detailed description of the category that the project or programme falls under. Where possible (especially if this tool is implemented at project design phase), organisations whose project's mark falls under *1-No contribution* or *2-Limited contribution* are encouraged to look at possible revisions to try and upgrade the mark. However, it is understood that not all projects can achieve a score of *4- Principal contribution to circularity* as "closing the loop" for circularity is not always possible in humanitarian settings, or may not serve the programmes' overall objective.

Circularity checklist for implementing organisations

To go further, the detailed **Checklist for implementing organisations** attached as an appendix (**Annex 1**) provides implementing partners with a flexible tool to assess the degree of circularity of interventions and activities per selected sectors of the JRP. A user guide is

included in the Checklist, which also provides a template for users to set-up their own tailored action plan to improve the contribution towards circularity of their respective organisation and / or programme(s).

Chapter 6: Circular Economy roadmap for implementing partners programming

Integrating Circular Economy approaches into humanitarian programming could lead to a better use of resources and mitigate the impact of operations on the environment, while creating opportunities for a sustained impact of the interventions. Implementing circularity in programming is not a difficult task and does not require large scale investments or a repurpose of the programming.

The Circular Economy in the humanitarian sector has made a timid approach. However, the humanitarian sector has a lot to learn from existing Circular Economy approaches in the private sector. The following roadmap is adapted from Queensland's state Circular Economy checklist: Actions you can take to make your business more circular and includes a phased approach of programme design / adaptation which constitutes a roadmap towards increasing circularity. The section follows-on with an illustration of the roadmap's implementation through two case-studies of fictional organisations which decide to shift specific humanitarian projects towards increased circularity by respectively 1/ limiting the use of resources and waste production in non-food items distributions and 2/ exploring untapped potential of rainwater collected from an infrastructure project as a valuable resource.

PHASE 1 – Determine what goes in, what leaves out

Map out the inputs that go into your programme interventions:

- How many finite resources your programming uses monthly and how much do they cost – this should be assessed for both the operations' support perspective and field programmatic aspect (such as inputs used by beneficiaries participating in project activities)
- How much electricity, water, heat, fuel you use for operational needs for one month and how much do they cost as well as which are the related assets involved (vehicles, IT items…).

Map out the externalities produced by your program interventions:

- Identify how much, and what types of externalities are resulted from your interventions which go to waste or are leaked into the ecosystem and could be re-used, reduced or create value. It may include but not be limited to:
    - Any material or resource that could be recycled or reduced by design: paper, plastic, metal, wastewater, etc.
    - Any output waste that results from direct interventions with beneficiaries such as packaging (bags, crates, recipients, jerrycans, etc.) or CO2 emissions from transporting goods

Select an intervention and evaluate its supply chain to assess how you can aim to minimize the consumption of finite resources and the production of waste in each stage.

PHASE 2 – Adapt your programming to do more good than it already does

Implement a rough cost-benefit analysis for each input and output category to identify which one(s) represent the highest burden in terms of resource use, waste creation and the highest potential for value creation or environmental or economical savings. Identify assets/spaces in

your programming that could be invested to create value for beneficiaries and persons of concern. Review the feasibility of these suggested actions against foreseen costs, local context and programme timing and goals in order to select the most relevant one(s) (highest potential/ feasibility ratio). Develop a corresponding action plan with achievable goals and associated metrics.

Decide where you are going to add circularity into your programming, and which is the path for achieving the circularity objectives taking into account the three Circular Economy principles:

- Minimise waste and pollution
- Keep products and materials in use
- Regenerate natural systems

Examples of possible avenues for action per pillar include:

Minimise waste and pollution

- Transition options to the use of renewable energy e.g., solar for powering key assets
- Consider available options to make assets more energy-efficient
- Where possible, consider options for second-hand purchases (e.g., assets)
- Consider localising procurement to reduce pollution associated with transporting and storing goods
- Consider whether goods or items procured as part of the project could be compostable or produced from recycled materials and/or whether longer-life items could be purchased
- Look into options to minimise packaging of goods or items involved in project delivery (incl. compostable packaging)
- Look into optimising storage management to avoid expiration of perishable products
- Awareness-raising among own staff as well as beneficiary communities on resource-conscious practices

Keep products and materials in use

- Look into options to reuse goods (incl., packaging) and assets involved as part of project delivery, including by the initial user (organisation or beneficiary) but also sharing options and possible partnerships
- Look into options to repurpose or upcycle goods and assets involved in project delivery, including possible partnerships
- Where possible consider repair and refurbishing options for both assets and goods
- Consider donating or selling on second-hand markets products or asset no longer used on the project
- If re-using is not possible, optimise the recycling of goods and assets involved in project delivery, including by developing suitable partnerships locally

- While considering the costs of these various options, also account for the expected value creation for the local economy as well as possible positive effect on livelihood opportunities for the affected populations of such schemes
- Awareness-raising among own staff as well as beneficiary communities on options and benefits in reusing, repairing or repurposing

Regenerate natural systems

- Consider opting for renewable energy instead of fossil fuels
- Look into projects or components of projects where regenerative farming could be supported at the local level including through capacity-building, demonstrating plots and in-kind and financial support
- Consider promoting quality compost in agricultural projects or components of such projects
- Aim to raise awareness among own staff as well as beneficiary communities of the benefits of regenerative practices including composting
- Consider setting up partnerships with stakeholders well experienced and knowledgeable of regenerative practices

PHASE 3 – Engage

The Circular Economy is built around collaboration and by being open about your ambitions you may be able to find new ways of working towards your goals that also complement the stakeholders you work with, including beneficiaries.

Engage: Ensure that all stakeholders in your programming understand the new goals and ambitions for example through training & education sessions. Try as much as possible to create awareness and introduce every stakeholder (including beneficiaries and persons of concern) into the topics of circularity. Explain clearly that circularity can expand the capacity and benefits of your programmes; engage with stakeholders who possess relevant complementary expertise, experience or skills useful to achieving your identified steps and action plan towards improved circularity

Feedback: Include at every step of the programming and as early as the feasibility assessment live feedback from all your stakeholders, including beneficiaries and persons of concern. Share and disseminate results from relevant pilot activities or initiatives to inspire.

Be adaptive: be ready to adapt in case results are not as expected

Learn: take advantage of the knowledge gained, share it widely and include it in your future programming

PHASE 4 – Evaluate and optimise

Circularity is built on a system view of the interventions, therefore setting up a strong monitoring and evaluation system is key. Evaluation should be done at specific and regular occurrences in time in order to catch up possible externalities, point out programme's successes and progress towards Circular Economy goals as well as celebrate and share the "wins".

Sample **indicators** allowing to capture and assess circular impact and effects of specific interventions include (to be selected depending on relevant to specific project or interventions):

- # of entities that actively develop circularity and/or achieve a close loop system[39] (outcome-level)
- # of beneficiaries or stakeholders directly provided with knowledge and/or resources relevant to circularity as part of the intervention
- Amount of support invested as part of the response in country on sustainable consumption and production and/or environmentally sound technologies;
- Kg of waste recovered;
- Dollar value of waste transformed;
- Number of municipal waste facilities supported in creating value from collected waste;
- % and volume reduction of water or electricity use by actors;
- % and volume reduction on fresh water consumption (by beneficiaries and/or implementing organisation);
- Dollar value of saved fresh water;
- Number of items repaired for reuse;
- Number of jobs created/maintained in circularity efforts;
- Number of income-generating opportunities created/maintained locally in the circular economy sector (including green jobs);
- # hectares of degraded land rehabilitated/regenerated and/or under holistic management (outcome-level)
- # of hectares of agricultural land benefitting from increased irrigation sources through rainwater harvesting
- # cube meters of (rain)water harvested and reused
- # Infrastructures constructed/rehabilitated/retrofitted that are made sustainable, resilient and/or resource-efficient (outcome-level)
- Amount of support for (or number of actions implemented in direct support of) the conservation and sustainable use of biodiversity and ecosystems
- # Transitions completed towards sustainable and/or resource-efficient asset, energy source, good or practice during the intervention

This list is non-exhaustive and project- and organisation-specific indicators are encouraged to be developed by actors.

[39] This indicator accounts for all entities or actors involved in the effort

Case studies: Applying the roadmap to humanitarian interventions[40]

1- Packaging ownership in humanitarian distributions

Packaging has been a major burden for the environment as inappropriate disposal practices or high reliance on single-use packaging has been impacting the environment for years. Due to production design not taking into account circularity, it is estimated that only 9% of the plastic packaging has been properly recycled, whereas 9.2 billion tons of plastic have been produced globally since the 1950s of which the most of it is sent to landfills or disposed directly into the environment.[41] According to Ellen MacArthur Foundation, replacing 20% of the plastic produced globally could provide over USD 10 million in business opportunities, in addition to lowering the pressure on the authorities in charge of the management of solid waste and contributing to a better environment.[42]

Circular Economy could provide a solution to the high quantities of packaging produced worldwide. Rather than focusing solely on recycling, a costly endeavour, circularity, through its system thinking approach, proposes a change in mindset when thinking about packaging. Rather than seeing packaging solely as a single solution, Circular Economy proposes that packaging could be used as a value asset which could bring benefits to consumers.[43]

According to USAID, "addressing the issue of humanitarian packaging waste is a key part of this larger (humanitarian) effort" due to its oversized impact on the environment and the delivery of public services during humanitarian crises and in host communities.[44] Applying Circular Economy concepts in the humanitarian sector could be challenging, as the strict organisations' and donors' requirements (such as procurement guidelines and general standards) rightly prioritises the health and safety of vulnerable populations rather than resource efficiency. However, in protracted crises, in contexts where solid systems can support increased circularity, circular approaches could be one of the solutions towards a higher sustainability of the sector.

The objective of non-food items (NFI) distributions in an emergency is to ensure that the immediate needs of affected populations are covered while maintaining their dignity. In protracted crises, where affected populations gain a degree of stability, environmental issues related to NFI distributions could be further prioritized in humanitarian programming. Management of the solid waste resulting from such activities, for instance, poses great challenges for public authorities in densely populated areas, and actions could be put in place to limit generation of waste.

Using the fictional example of a humanitarian organisation doing a NFI distribution of items part of UNHCR recommended NFI lists, this case-study explores options for including Circular Economy in NFI distributions using the Ellen MacArthur Foundation "Reuse Framework"[45] - a framework designed to understand benefits, challenges and application of reusing packaging

[40] Please note that these examples are fictional ones provided by the authors to illustrate the application of the suggested roadmap for circularity
[41] The supply chain solutions centre (na), Packaging waste 101: the problem. Available online.
[42] Ellen MacArthur Foundation (2020), Re-use: Rethinking Plastic. Available online.
[43] Ibid.
[44] United States Agency for International Development (USAID) (2020), Joint initiative for sustainable humanitarian packaging waste management. Available online.
[45] Ellen MacArthur Foundation (2020), Re-use: Rethinking Plastic. Available online.

- and building on the "Reuse Viability Framework"[46], a proprietary tool created by the Consumers Beyond Disposability initiative to make reuse systems scalable and viable.

Organisation X was awarded the responsibility of distribution of hygiene materials and oil lamps. The organisation was able to secure a contract from a local bulk chemical producer, which provided one ton of detergent to be distributed at the activities site of the organisation, in a refugee camp.

PHASE 1 – Determine what goes in, what leaves out

Following identification of the inputs and outputs of the project, the organisation was able to achieve economies of scale through buying a larger, bulk quantity of the assistance and receive a better price from the contractor. Through negotiation, the organisation was able to include the transport of the detergent at the site and rent bulk storage capacity at a low price.

Previous analysis revealed that the detergent bags posed a great challenge to the environment since the plastic part of packaging was not biodegradable and it was often thrown in the open, regularly blocking sewerage of the camp and increasing the risk of flooding.

PHASE 2 – Adapt your programming to do more good than it already does

The programming team decided to explore the possibility of piloting the Ellen MacArthur Foundation Reuse Framework[47] in the distribution of detergent in the camp. Brainstorming within the programming team and community leaders revealed the following possible scenarios:

1. **Refill at home**: this scenario implies that the organisation provides a container of a fixed size and the beneficiary uses the same container each time they benefit from a distribution. In this scenario, the organisation can achieve savings in terms of transportation and packaging costs (since the NFI will be provided in bulk) and beneficiaries can benefit from lower difficulties in carrying or storing the container. However, an initial investment in containers would be necessary.
2. **Refill on the go**: this scenario implies that the beneficiary will bring a container of their choice in which to receive and carry the assistance. The beneficiary would access a distribution point and the organisation would provide the quantity of detergent based on the beneficiary's vulnerability. The main benefit of this scenario would be flexibility and resource-efficiency, as the organisation would not need to purchase new containers. However, this may create technical challenges in ensuring the assistance is equally distributed (quantities should be based on needs and vulnerability rather than size of beneficiaries' self-sourced containers). Lack of awareness about the means of storage of detergent,

Figure 4: Reuse: rethinking packaging model

[46] World Economic Forum and Kearney (2021), Future of Reusable Consumption Models – Insight report. Available online.
[47] Ellen MacArthur Foundation (2020), Re-use: Rethinking Plastic. Available online.

poor quality of the recipient, and compliance with the product safety standards could pose challenges to a distribution performed under this scenario.

3. **Return from home**: In this scenario, the organisation will go shelter by shelter and distribute the detergent in an initial container. However, in cases when distribution is repeated, the beneficiary is encouraged to return the same container, which is cleaned, sanitised, and returned to the beneficiary refilled. This scenario is suitable for situations when person-to-person contact should be limited. Also, potential issues at the distribution site are mitigated. However, higher costs incurred from the initial investment in packaging and distribution costs (including cleaning and sanitisation as well as sensitisation of beneficiaries on where and how to return the containers) could limit the profitability of this approach.
4. **Return on the go**: In this scenario, the beneficiary receives the detergent in an initial container. After use, the beneficiary would return the container to the distribution site (or any other point). The container would then be taken, cleaned and refilled. This scenario would be the most optimal in minimizing the distribution costs but it would still incur an initial cost in the initial container investment, as well as costs associated to cleaning and refilling.

PHASE 3 - Engage

Develop a clear, transparent, and persuasive communication plan by showing the pragmatic value of the changes in intervention. The message could be complemented by real-world community sourced examples. At the same time, continuously gather feedback from the relevant stakeholders, especially direct beneficiaries. It will not only make your programming stronger, but also encourage community ownership of the project.

PHASE 4 – Evaluate

Organisation X may rely on the relevant sample indicators outlined in the above roadmap, and is recommended to develop additional internal ones specific to its action plan.

2- Rainwater harvesting in humanitarian infrastructures

As the second most water scarce country in the world, Jordan experiences regular shortages and sees it water supply rapidly decreasing due to climate change, population growth, demographic shocks and heightened competition over such resource across country borders. Rainwater harvesting offers a possible solution for increased water collection, to contribute to water security for refugees and local populations alike.

The following case study outlines the fictional example of Organisation Y which implements a rainwater drainage network infrastructure project in-camp. The infrastructure is designed to collect and drain out rainwater to alleviate regular flooding events affecting the security and sanitation of camp residents.

PHASE 1 – Determine what goes in, what leaves out

When mapping out inputs and outputs, the main contributors are found to be construction materials used for the project, as well as the costs and emissions generated from transporting these materials to the organisation's warehouse and construction site. The collected rainwater

(which is released into inhabited areas outside of the camp boundaries) is also found to be a key externality of the project.

PHASE 2 – Adapt your programming to do more good than it already does

The following areas of improvement and opportunities to minimise waste and pollution, keep products and materials in use and regenerate natural systems are identified by the assessment implemented by Organisation Y:

- Infrastructure construction materials and associated emissions: opportunities to maximise the lifetime of the materials are identified by ensuring quality of the procured materials; depending on technical specifications and local availability, the possibility to procure materials made of (part) recycled raw inputs should be considered; local procurement is preferred to minimise pollution generated from transporting materials to the; appropriate storage is required to avoid losses or wastage of materials while the energy costs associated to transportation and storage can be optimised.
- Construction tools: the concrete mixers required for the project could be rented or purchased jointly with other organisations implementing projects in the same camp to share costs and maximise tools utility and usage; the possibility to fuel the mixers with green energy (such as solar) should also be looked into.
- Construction equipment: the quality of the protective gear purchased for the workers is paramount to ensure longest possible lifetime use of said equipment; sharing options with other organisations implementing projects in the camp should be explored.
- Labour and human resources: hiring workers locally and among the population of concern (camp residents) is a relevant option to provide income-generation opportunities for the affected population while building the local capacities, which helps guaranteeing sustainability of the project's outputs (knowledge acquired by constructing the infrastructure could be useful after project end for the community to implement maintenance or small repairs).
- Rainwater: this project output could constitute a valuable raw input for other local activities such as agricultural irrigation, particularly relevant in a context of water scarcity. Opportunities to harvest, process and reuse collected rainwater should be explored including in partnership with relevant actors who may implement agricultural activities in or near the camp and/or who may have existing prior experience in designing a water harvesting and treatment system in a similar setting.

PHASE 3 – Engage

Relevant camp partners will need to be engaged to identify sharing opportunities as well as opportunities for closing the loop of the collected rainwater. Local community and direct beneficiaries should be consulted as well to confirm the relevance of the proposed adaptations and help design and effective and adequate implementation action plan.

PHASE 4 – Evaluate

Organisation Y may rely on the relevant sample indicators outlined in the above roadmap, and is recommended to develop additional internal ones specific to its action plan.

Chapter 7: Circular Economy communication guidelines

Circular Economy is a rather new concept, often perceived as complex. This novelty could give rise to ambiguities or challenges in getting the endorsement from the main stakeholders. In the humanitarian sector, which is already guided by norms and operational imperatives, the consideration of circularity is faced by competing priorities such as the scarcity of funding, cultural barriers or short time frames dedicated to project implementation. However, circular elements could prove to be one of the solutions available for specific issues in the humanitarian sector.

Communicating circularity is therefore key to helping practitioners focus their message and reach out coherently to their audience. Efficient communication of circularity could also influence the effectiveness of the intervention, as circularity requires a systemic approach and having a wide endorsement could streamline circularity. Additionally, actively reaching out to partners or counterparts which offer the right service, product or solution through adequate communication may help maximise circularity in a given intervention or even lay the path for new circular interventions and a community of practices. In this respect each communication strategy or plan should consider the potential for contributing to existing or emerging community of practices around the Circular Economy.

Findings from the Circular Economy Assessment in the Humanitarian Sector in Jordan revealed that the main challenges related to the implementation of Circular Economy are cultural, regulatory, technological, and funding issues. All these different levels should therefore be considered when designing a communication plan or strategy around circularity. As a result, increasing stakeholders' awareness and their willingness to engage with Circular Economy becomes a key success.

When designing a communication plan for Circular Economy, as one of the three groups constituting the population of interest of the assessment, the following axes may be adopted:

1. **Government stakeholders**:
    a. Providing information about the status of circularity in the humanitarian sector, circularity achievements, and potential opportunities of engagement with other stakeholders.
    b. Raising awareness about mechanisms and tools for institutional coordination, as well as global platforms where information can be shared and partnerships can be initiated.
    c. Encouraging a conducive and enabling institutional environment for circularity, including disseminating information on how circularity is or can be integrated in specific policies or strategies.
    d. Focusing on the benefits of circularity for increasing the socio-economic development of the beneficiaries.
2. **Implementing partners:**
    a. Providing information about the status of circularity in the humanitarian sector, own circularity achievements and successes, and potential opportunities of engagement with other stakeholders and programmes for increased circularity.

b. Raising awareness about Circular Economy capacity building programmes.

c. Communicating with communities on benefits of circularity including pedagogical and localised approaches to de-construct possible cultural barriers limiting benefits of circularity.

3. **Donors**

a. Providing information about the status of circularity in the humanitarian sector, circularity achievements, and potential opportunities of engagement with other stakeholders.

b. Raising awareness about Circular Economy capacity building programmes.

c. Providing information about success stories of Circular Economy-related programming.

d. Advocating towards relevant stakeholders for a conducive and enabling institutional environment for circularity.

e. Raising awareness about Circular Economy capacity building programmes.

Relevant stakeholders to engage as part of the communication strategy may include, in addition to the above-mentioned three groups: any forum or group gathering one or several of the above three key groups (such as clusters, sectoral working groups…); policy makers; large businesses (especially those concerned by extended producer responsibility schemes, if applicable) and professional associations or chambers representing them; micro, small & medium enterprises (MSMEs) and their professional chambers; local authorities; local communities and the general public (women, men, girls and boys); civil society organisations (CSOs); experts, university students and the academia; physical or digital fora dedicated to the Circular Economy.

Per the findings of the assessment, gaining **community support** is essential for the Circular Economy to gain traction. The following approaches may therefore be considered by actors when communicating with communities specifically:

- Assessing possible cultural barriers to circular approaches through context understanding
- Systematic community engagement and localised strategies, including local partnerships
- Awareness raising on the immediate environmental and economic benefits of circular approaches for communities and beneficiaries
- Building local capacities in circular skills and approaches for sustainability.

The specific visibility and communication activities, outputs and channels will depend on each project's resources and context-specific elements.

Chapter 8: Mapping the SDGs against Circular Economy approaches in the humanitarian sector

The circular economy presents potential solutions to some of the global most pressing cross-cutting sustainable development challenges. The concept of a circularity therefore holds promises to accelerate implementation of the 2030 Agenda.[48] The following section maps out the Sustainable Development Goals (SDGs) against the three main elements of circularity, and provides pathways for implementation in the humanitarian sector.

SDG	Minimise waste and pollution	Keep products and materials in use	Regenerate natural systems
	Increasing livelihood opportunities through decreasing the invested material capital and focusing on the human capital of beneficiaries, their innovative practices, leading to higher resilience of communities.	Increasing the residual income of beneficiaries through improving the quality of aid distributed (either through better quality non-food items or cash) and increasing the use-life of non-food items distributed.	Encouraging sustainable use of the natural environment in order to limit the impact of over-utilisation of natural resources, increasing beneficiaries' resilience and decreasing the risk of conflict.
	Decreasing the amount of food waste and the use of resources for food production through implementing sustainable food production practices.	Providing agricultural techniques which use the existing natural capital in order to get the most of available resources.	Encouraging the adoption of a regenerative food production system in which the natural environment is strengthened through increasing the soil and water resources health as well as biodiversity.
	Encouraging green energy solutions has potential to minimise CO2 emissions whole positively impacting health and well-being globally.	Mitigating the impact of solid-waste, air and water pollution on the health and wellbeing of beneficiaries through sound solid-waste management, recycling, upcycling, etc.	Increasing environmental protection and restoration is essential for achieving health and well-being globally.
	Educating on environmental protection through minimising waste and pollution in order to contribute to a well-informed society and a resilient workforce.	Educating on environmental protection through keeping materials in use to increase communities' knowledge about sustainable use of resources.	Educating on natural systems regeneration practices to increase communities' awareness about the importance of natural capital.
	Encouraging both genders' participation and role as community-level drivers of change is	Recognising and building on the prominent role of vulnerable women and men in waste management in	Implement capacity building for female and male farmers to maximise their yield while

[48] United Nations General Assembly (2018), Circular Economy for the SDGs: From Concept to Practice. Available online.

SDG	Minimise waste and pollution	Keep products and materials in use	Regenerate natural systems
	key in achieving more sustainable consumption approaches.	humanitarian and development contexts, opportunities exist to foster employment income-generation for both genders in activities contributing to reusing products and materials as well as second hand or upcycling initiatives.	contributing to preserving natural ecosystems, which in turn contributed to reducing climate change impact on the most vulnerable including women and girls.
	Encouraging the efficient use of water for water-scarce countries and overall.	Increasing community awareness about the possible reuse of treated wastewater. Develop programming focused on water harvesting.	Increasing the quality and health of aquifers through gaining community support about the importance of limiting ground-water pollution.
	Encouraging renewable energy technologies.	Increasing the use and awareness of "waste to energy" approaches (e.g. biogas production through anaerobic digestion) in humanitarian settings.	Supporting a higher focus on nature-based energy solutions.
	Creating value and fostering livelihoods through solutions for minimising waste.	Creating livelihood opportunities in recycling, repairing or refurbishing of items.	Supporting regenerative practices in agricultural livelihoods and nature-based businesses.
	Encouraging innovation in biodegradable and renewable materials for job creation and resilient infrastructure development.	Increasing the use of recycled materials in interventions focused on infrastructure development. Supporting innovative solutions to waste management and recovery including incubation of small entrepreneurs.	Including local knowledge and eco-friendly solutions in developing interventions.
	A circular economy offers employment opportunities and improved life conditions to marginalised communities, while addressing pressing climate change issues helps protecting the most vulnerable.		
	Developing a urban planning policy focusing on the sustainable use of the material and human capital, including green buildings.	Developing a community-based and resilient solid-waste management to increase the overall wellbeing of beneficiaries and host-community.	Using urban farming as a tool to increase the resilience of communities, protect the local environment and reduce land use.
	Increasing the impact of interventions through more efficient choice of materials and resources in order to reduce the	Extending the lifecycle of products with emphasis on the use phase through Implementing the 9Rs.	Including renewable, compostable or recyclable materials in the composition of non-food

SDG	Minimise waste and pollution	Keep products and materials in use	Regenerate natural systems
	overall impact of production and consumption.		items distributed in order to minimise pollution.
	Ensure relief programmes and projects are designed and implemented in line with the Jordanian Sustainable Consumption and Production National Action Plan (SCP-NAP) and the Green Growth National Action Plan (GG-NAP).		
	Reducing the greenhouse emissions through a better choice of materials and community sensitisation.	Improving the recovery of waste produced as programme externalities.	Promoting climate-smart and regenerative practices in livelihoods and development interventions.
	Reducing the amount of waste produced as programme externalities.	Improving the recovery of waste produced as programme externalities to preserve the aquatic systems.	Encouraging sustainable and regenerative practices in livelihoods and development interventions as part of the blue economy.
	Encouraging an efficient use of land through sustainable constructions and minimisation of environmental impact.	Promoting nature-based solutions for waste utilisation (composting, greywater reuse…).	Increasing the use of sustainable and regenerative agriculture practices such as hydroponics, urban farming or crop rotation.
	Building institutions and civil society's capacities to strengthen a community of practitioners committed to minimising waste and pollution.	Fostering a sharing economy to support inclusion of the vulnerable communities through their increased access to resources.	Encouraging the sustainable use of the ecosystem helps mitigate risks of conflict over natural resources.
	Cooperation and multi-actors' approaches are paramount to achieving circularity in a sharing economy. By connecting different expertise and experience, the impact of circular initiatives will be maximised in an inclusive manner.		