

CIRCULAR APPROACHES

A LIFELINE FOR AGRICULTURE IN DISTRESS



AN OPPORTUNITY TO FARM WITH NATURE & REDUCE INPUT COSTS



During the first half of 2022, ACTED, LOST and Arc-en-Ciel conducted a nationwide joint assessment to determine to what extent transitioning to regenerative practices could improve farmer revenues and reduce waste in the current crisis. This factsheet summarizes key findings including on seeds, inputs, water use and supply as well as post-harvest and land management, etc. Governorate-specific trends are also available upon request.

1



Farmers have **reduced ability to afford** their usual agriculture inputs & resources in 2021 compared to 2019



seeds



Imported animal feed



Agrochemical inputs



Cooling



Transport

less affordable, or not affordable at all anymore

Wells, cited by 82% of KIs to be one of the main sources of water. These need to be run by electricity, fuel etc which are no longer affordable and unsustainable environmentally.

The drastic increases in prices and fluctuation of exchange rates observed in 2022 mean that these trends are now very likely to have exacerbated. For example, gasoline prices increased by 800% in June 2022 compared to July 2021. Inputs and resources are thus now even less affordable for farmers.

ACTED's 2020 study on Circular Economy estimated that valorization of organic waste energy and nutrients could lead to a cost recovery of USD 100 million per year in Lebanon.



Bioeconomy maximises inputs utilization and reduces waste. It uses renewable biological resources from land and sea, such as crops, forests, fish, animals and micro-organisms to produce food, materials and energy¹. In the ongoing crisis, a transition to bioeconomy would increase **cost recovery** and **profitability** for farmers.

¹Ellen MacArthur Definition of Bioeconomy

2



Farmers lack **knowledge** on circular agricultural practices:

83% of KIs reported that even the few farmers who compost themselves on their farms are **missing skills/knowledge on adequate/quality composting techniques**.

Farmers who don't use **composted animal manure**, kitchen waste or farm waste as inputs on their farms **lack information on how to produce them** (51%), **the know how** (45%), awareness on its **beneficial impact** on the **environment** (32%), and **information** on their preventative measures (28%).

Farmers have a **negative perception** of **natural** and **locally-produced inputs**:

91% of KIs reported that farmers perceive such inputs to be of **lower quality, not as productive, and worse at pest and disease management** than agrochemical and imported inputs.

However, **67%** of KIs stated that they would be willing to use **quality locally-produced animal feed** and **natural inputs** if they were available at a lower price than **imported agrochemical** and **imported inputs**.

63% of KIs reported that farmers would be **willing to use treated wastewater**.



Circular practices and the use of **local** and **natural products** can improve farmers' **immediate and long-term cost efficiency, competitive advantage, and quality of soil, water and production**. This can be done by providing access to **alternative climate-smart** and **innovative inputs**. **Raising awareness** on the risks and consequences of the **excessive use** of certain **chemicals** for nature, health, and food production is also needed to generate a behavioural change.

ACTED previously trained 3,700 farmers in Akkar region on land-use and landscape management practices for ecologically-sustainable agriculture livelihoods.

ACTED has implemented a pilot permaculture demonstration plot in Jordan, which is now being scaled-up in Iraq following the success of this natural and local agricultural solution.

3



Farmers tend to use **agriculture methods** that are **harmful** to the **soil, water, environment** and **negatively impact** their **production**



Farmers tend to mostly use **imported inputs**, even though such inputs are **more expensive**.



95% of KIs reported that farmers who use compost and/or organic fertilizers tend to continue using **unnatural inputs**.



56% of KIs reported that farmers tend to use **too much fertilizers**.



Wells/**bore wells**, one of the farmers' **main water sources**, is also cited as being the **most contaminated**. **93%** of KIs reported that farmers **do not treat the contaminated water** they use for **irrigation**.



Regenerative agricultural practices eliminate input use and restore the **natural ecology**, through building soil health, maintaining living roots year around, minimizing soil disturbance, improving water capture/storage/retention on farm, maximizing crop diversity and integrating livestock.

Producing **alternative commodities** (including bio-based feedstock) using Circular Agriculture reduces input use and post-harvest waste methods as well as the use of non-renewable materials such as plastic. ACTED has identified key commodities that can be used to produce alternative packaging, innovative products that replace single-use plastic, etc. Not only will such products provide jobs through support for innovative startups in the manufacturing sector, but also provide opportunities for farmers to grow high-value commodities that can serve as important feedstock, thus bringing them additional income.

ACTED has developed partnerships with global technical leads on various aspects of regenerative agriculture, and has piloted several similar approaches across the MENA region which can be leveraged in Lebanon. In addition, to ensure market incentives for regenerative practices exist, ACTED supports private sector actors that facilitate regenerative agriculture.

ACTED has successfully piloted several innovative approaches such as the production of alternative feed for chickens and sheep and the use of climate smart materials in food production. Such pilots match the Lebanese context and can be scaled up.

4



Post-harvest waste causes value loss:



Overall, as already evidenced in ACTED's 2019 assessment, **farmers lack efficient storage systems** and are not always able to sell their harvested products.



91% of KIs stated that farmers **throw their waste with municipal trash**, while 35% burn it.



In 2021, KIs reported that only **59% of farmers had access to refrigerated transportation**².

Among farmers who could not sell their crops in 2021, only 43% were able to preserve/process them, 37% ate the produce, 28% composted them, while as many as 41% gave them away for free, and 26% threw them away.



Post-harvest loss has several **negative consequences on farmers**, as it reduces their ability to purchase inputs for the next season (78%), cover household basic needs (47%) or pay for farm staff salaries (38%).



Reducing waste is possible through access to efficient storage systems and cold-chain logistics. ACTED's approach is to **eliminate cost barriers** related to transportation, storage, processing, etc.

Improving the **valorization of organic waste** results in cost-recovery while meeting other existing energy needs. ACTED promotes:

- **Small-scale biogas systems** with hyperlocalized waste collection schemes to meet energy needs of communities while producing bio-fertilisers.
- **Living compost**, which overcomes key problems caused by traditional compost in Lebanon.

In Lebanon, ACTED has successfully built linkages between cooperatives, farmers and companies offering refrigerated transportation thus supporting hyperlocalized chains.

Recent ACTED feasibility and acceptability assessments further confirm the viability of biogas in Lebanon.

In line with its localization strategy, ACTED shares its expertise with its network of local partners and has also set up a consortia of global technical partners to promote these approaches.

Circular solutions for farmers - a lifeline for economic recovery and adaptation to the climate



Assessment Methodology: 116 responses were collected through quantitative surveys with Key Informants from local NGOs, University staff, private companies, ministries, cooperatives, etc, both in-person and over the phone.

²ACTED experts identified this finding to be exaggerated maybe due to a bias in key informant's responses as the number of refrigerated transportation is supposedly much lower.