



Sustainable Development Goals

Food and Agriculture
Organization of the
United Nations

Distr.
LIMITED
E/ESCWA/CL1.CCS/2021/WG.26/Report
15 July 2021
ORIGINAL: ENGLISH

Economic and Social Commission for Western Asia (ESCWA)

REPORT

LEBANESE YOUTH FOOD SYSTEMS DIALOGUE:

Water for Food Systems

ONLINE VIRTUAL MEETING, 6 JULY 2021

Summary

The Lebanon Youth Parliament for Water (LYPW), in collaboration with the Economic and Social Commission for Western Asia (ESCWA), organized the Lebanese Youth Dialogue on Food Systems: Water for Food Systems virtually through Teams on July 6, 2021, in order to contribute to the Food Systems Summit (FSS) to be convened in September, 2021. Around 36 people attended the meeting, representing youth from national organizations, universities, companies, and others, as well as UN agencies.

The goal of the Dialogue was to gather game changing actions from Lebanese youth to improve the role of water in food systems in terms of assuring efficient use and safety across the many levels, including research, capacity building, funding, and governance. It also sought to prioritize these actions, as well as identify roles and key stakeholders. The output of the dialogue will be submitted to the Food Systems Summit to offer decision-makers and major stakeholders' key insights on water for food systems in Lebanon.

Part I of the dialogue provided background information on the use of technology to improve water use in food systems while Part II introduced ways to enhance/improve water quality to ensure food safety. Both sessions used an interactive discussion platform with MURAL and open discussions to allow participants to identify game-changing solutions.

Note: This document has been reproduced in the form in which it was received, without formal editing.

21-00505

CONTENTS

<i>Chapter</i>	<i>Page</i>
Introduction.....	3
Conclusions and way forward.....	3
Summary of discussions	5
A. Opening session	5
B. Part I.....	6
C. Part II:	7
D. Closing session.....	8
Organization.....	8
A. Date and venue.....	8
B. Participants.....	8
Annex 1: Results of Building Solutions Together	9
Annex 2: Agenda of the Dialogue.....	10
Annex 3: List of Participants	11

INTRODUCTION

1. In September 2021, the UN Secretary-General will hold the Food Systems Summit (FSS), with the purpose of initiating actions, solutions, and strategies, as well as creating a road map to more viable, inclusive, and healthy food systems that are robust to stressors like the COVID-19. To achieve all of the Sustainable Development Goals (SDGs), food systems, or the way the world produces and consumes food, must undergo a radical transition.
2. In preparation for the 2021 FSS, the Lebanon Youth Parliament for Water (LYPW) in partnership with the Economic and Social Commission for Western Asia (ESCWA), conducted virtually the Lebanese Youth Food Systems Dialogue on Tuesday, July 6, 2021, from 5:00-7:00 pm (Beirut time). The Dialogue strived to bring together diverse youth stakeholders' viewpoints, ideas, and experiences on ways to improve the efficiency and quality of water in food systems. In the FSS, an outcome paper will be presented to reflect those discussions.
3. Representatives from national organizations, universities, private sector and others as well as LYPW and ESCWA resource persons, were brought together to provide background information on how technology can improve water use in food systems and ways to enhance/improve water quality to ensure food safety.
4. The Dialogue mode allowed for active participation of stakeholders either directly through intervening with their experiences and ideas or through the use of an interactive web platform called "MURAL" where participants could directly write game-changing actions to be viewed by all. The chat box was also used for direct input. Time was also allocated for oral discussion about the action, responsibilities, and stakeholders involved.

CONCLUSIONS AND WAY FORWARD

5. The output of the Lebanese Youth Dialogue on Food Systems will be used as input to the FSS to be held in September.
6. The Dialogue provided game-changing solutions and relevant actions that are related to the two identified topics of relevance to the country:

Topic 1: How can technology improve water use in food systems?

- Invest in technology, increase efficient use of available water sources in irrigation, and optimize irrigation scheduling
- Raise awareness on the use of affordable technology and educate farmers on use of ICT to improve crop production and make available micro credits for farmers to use new equipment that improve agriculture
- Adopt low-cost sensors to monitor water quality
- Reuse of treated wastewater
- Ensure that water policies are implemented through tracking efficient irrigation in agricultural fields
- Collect data regarding water demand and supply and analyze the data to promote better use

- Promote the use of renewable energy in agriculture specially to reduce cost
- Promote collaboration between universities
- Mitigate climate change considering smart innovation systems and create future climatic scenarios to set agricultural calendars

Topic 2: How to enhance/improve water quality to ensure food safety?

- Map and identify main sources of water pollution and implement a comprehensive water quality monitoring program in the country to identify sources of pollution
- Encourage small scale wastewater treatment and implement proper treatment methods through WWTP to be used in agriculture. It is important to treat wastewater at source before discharging into water bodies that will be then used for irrigation
- Rehabilitate irrigation networks and ensure continuous maintenance of sewage networks
- Enhance governance, improve regulation and standards and apply new/strict policies/procedures to prevent/mitigate pollution at the source levels rather than looking for innovative or classical ways to treat pollution on a bigger scale
- Improve efficiency of use of fertilizers and pesticides and test the water quality used for irrigation regularly
- Raise awareness on the importance of using treated wastewater, and educate farmers on safe use of treated wastewater and regulations to indicate type of crop and areas (farmers use polluted water but the notion of using treated water is still considered an outlaw)
- Enhance the use of appropriate technologies to ensure water quality and safe food
- Revitalize the role of local governments that can support exploring alternative solutions for using quality nonconventional water, at the same time take appropriate measures to prohibit misuse of fertilizers and pesticides

SUMMARY OF DISCUSSIONS

A. OPENING SESSION

7. **Ms. Maya Atie**, president of the Lebanon Youth Parliament for Water (LYPW), welcomed all attendees to the Lebanese Youth Food Systems Dialogue, which was designed for young people to discuss improving the efficiency and quality of water in food systems. She emphasized how Lebanon is going through unparalleled social, economic, and environmental challenges. The overexploitation of water resources in Lebanon further exacerbated by climate change and poor management has aggravated water resources in terms of quality and quantity. Ms. Atieh stated that similar events that witness youth engagement and participation, offer us hope that we can convert these challenges into possibilities for growth. Finally, she welcomed this Dialogue as part of the UN food Systems Dialogue and encouraged the fruitful engagement of participants.

8. **Ms. Julie Abouarab**, ESCWA, commended the support and collaboration between LYPW and ESCWA on this key theme for achieving the SDGs through reforming food systems. She indicated that the Arab Youth Dialogue on Food Systems, March 2021, brought together young people from all over the Arab region. She highlighted the necessity of such dialogues to discuss ways to transform food systems, ensure sustainability of natural resources while eradicating hunger and malnutrition, creating decent job opportunities, improving access to healthy food, supporting local communities, and empowering women and youth. Ms. Abouarab, stressed on the goal of this discussion which is to come up with real proposals that Lebanese youth can implement and participate in as part of their contribution to make the Lebanese food system a healthy and sustainable one for the benefit of all.

- **Ms. Zeina Abi Aad**, Secretary, LYPW, provided a brief presentation identifying goals and objectives of the UN Food System Summit 2021, the different types of dialogue, key players, and the five action tracks. In addition, she provided some facts about the status of current Lebanese water resources, and major challenges faced. She further set the scene for the discussion stating the goals as well as the process to consolidate the participants' input that will inform the summit. Finally, she outlined two major questions for the Lebanon that would be addressed during the dialogue, (1) How can technology improve water use in food systems? and (2) How to enhance/improve water quality to ensure food safety?

B. PART I: How can technology improve water use in food systems?

9. **Dr. Roula Bachour**, an agricultural expert and currently an Adjunct Research Associate at the American University of Beirut (AUB) focusing on water-energy-food nexus systems discussed how technology might help food systems use water more efficiently. She defined the complexity of the food systems and focused her presentation on use of water in food systems stating that the daily food intake ranges between 2,000 and 5,000 liters of water. She highlighted the various technologies (e.g., AI, drones, IOT Sensors/robots, and so on) that improve water use and reduce water loss however stressed on the need provide farmer's the know-how (irrigation scheduling and efficient water use). Dr. Bachour further reiterated the need for smart water-saving technology, innovation, investment, crop diversification, and raising awareness.
10. **Ms. Saniya El Nakib**, LYPW, facilitated the discussion for how technology can improve water use in food systems session and provided a quick tutorial on how to access and navigate through the Mural application link.
11. Participants then started navigating through the application and proposing game changing actions based on their experiences and perceived priorities of the country (results as provided by participants are available in Annex 1):
 - Invest in technology
 - Increase efficient use of available water sources in irrigation and optimize irrigation scheduling
 - Adopt low-cost sensors to monitor water quality which is suitable for Lebanon's case.
 - Raise awareness on the use of affordable technology and educate farmers on use of ICT to improve crop production
 - Make available micro credits for farmers to use new equipment that improve agriculture
 - Reuse of water and treated wastewater
 - Decrease water consumption
 - Research virtual water trade
 - Ensure that water policies are implemented through tracking efficient irrigation in agricultural fields
 - Collect data regarding water demand and supply and analyze the data to promote better use
 - Promote the use of Renewable Energy in agriculture specially to reduce cost
 - Promote collaboration between universities
 - Mitigate climate change considering smart innovation systems and create future climatic scenarios to set agricultural calendars e.g. identify crops
12. In the open discussion participants addressed issues on water energy food nexus and how to engage this nexus in agriculture. In addition, issues such as the proper adoption of solutions, availability of resources, collaboration between ministries and institutions, export of highly consuming crops, markets for products, and hesitation in use of treated wastewater for irrigation were highlighted. Other comments reiterated the input on Mural in regard to optimal irrigation scheduling, adopting low cost sensors to monitor water quality, collecting data especially for ground water.
13. **Dr. Michel Afram**, Lebanese Agricultural Research Institute (LARI), indicated that a long-term solution is needed especially for water quality. Thousands of farmers are using the free application

LARI LEB that gives information to farmers including pest and insect control, and water and weather data. With 85 experiment project every year, the results are diffused in the application and through reports that are disseminated to farmers, universities, and student. Every year 400 students train across that 10 station in Lebanon.

C. PART II: How to enhance/improve water quality to ensure food safety?

14. **Dr. Ibrahim Alameddine**, assistant professor, AUB, provided a presentation on water pollution linking it to food safety concerns. He stated that water pollution has a negative impact on the economy in general, whether it is on fish production, livestock, or agricultural yields highlighting Lebanon water situation in Litani River and the Qaroun Reservoir. He indicated that polluted irrigation (i.e. bacterial pollution, nitrate pollution, or toxins) leads to contaminated crop produce, providing examples of polluted irrigation in the Bekaa. Finally, Dr. Alameddine stressed on importance of pollution control, and the safe reuse of treated wastewater.
15. **Mr. Mohamad Abbas**, LYPW, facilitated the session discussion. Participants then started navigating through the application and proposing game changing actions based on their experiences and perceived priorities of the country (results as provided by participants are available in Annex 1):
 - Map and identify main sources of water pollution and implement a comprehensive water quality monitoring program in the country in order to identify sources of pollution
 - Encourage small scale wastewater treatment
 - Implement proper treatment methods through WWTP to be used in agriculture. It is important to treat wastewater at source before discharging into water bodies that will be then used for irrigation
 - Rehabilitate irrigation networks and ensure continuous maintenance of sewage networks
 - Enhance governance, improve regulation and standards and apply new/strict policies/procedures to prevent/mitigate pollution at the source levels rather than looking for innovative or classical ways to treat pollution on a bigger scale
 - Update related guidelines on water quality,
 - Improve efficiency of use of fertilizers and pesticides
 - Raise awareness on the importance of using treated wastewater, and educate farmers on safe use of treated wastewater and regulations to indicate type of crop and areas (farmers use polluted water but the notion of using treated water is still considered an outlaw)
 - Increase investment in data collection
 - Enhance the use of appropriate technologies to ensure water quality and safe food
 - Test the water quality used for irrigation regularly
 - Use of remote sensing tools
 - Revitalize the role of local governments that can support exploring alternative solutions for using quality nonconventional water, at the same time take appropriate measures to prohibit misuse of fertilizers and pesticides
16. In the open discussion participants discussed issues on small scale wastewater treatment plants, identification of sources of wastewater pollution, possibility of use of treated urine, cyanobacteria toxicity, quality monitoring program.

D. CLOSING SESSION

17. **Ms. Maya Atie, LYPW and Ms. Julie Abouarab, ESCWA**, thanked the participants for a fruitful discussion, as well as their active participation and valuable insights throughout the dialogue. They also encouraged active participation and dissemination through the respective youth networks.

ORGANIZATION

A. DATE AND VENUE

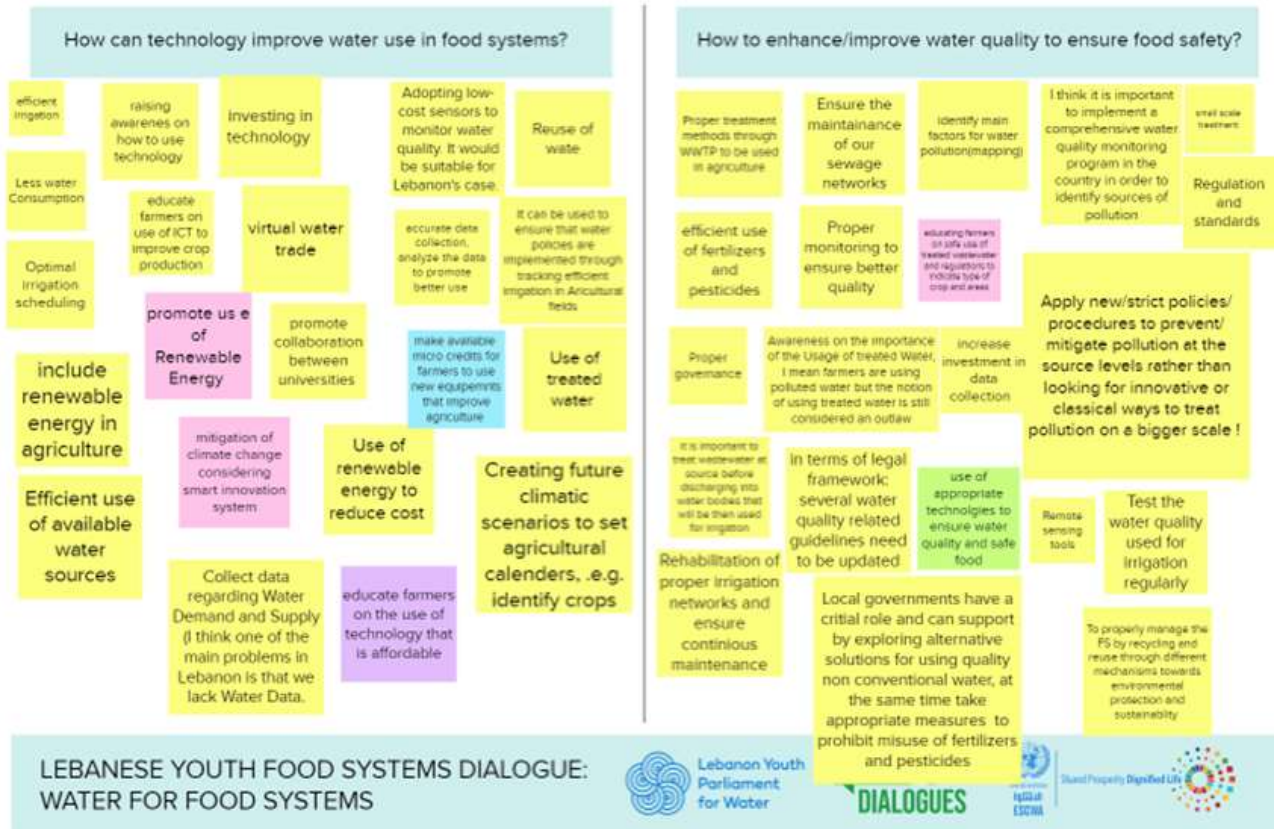
18. On July 6, 2021, the Youth Dialogue was held virtually through Teams. Participants were invited to write their recommendations live while streaming on an interactive online platform called "MURAL," and afterwards time was set aside for conversations to go over the participants' experiences and ideas. The recording of the event is available on :

PARTICIPANTS

19. Key stakeholders were invited to the dialogue, including representatives from youth national organizations, universities, private sector and other to share their expertise, views, and perspectives, as well as propose solutions for improving the efficiency and quality of water in food systems.
20. The full list of participants is provided in Annex 3.

ANNEX 1: Results to game changing solutions

I. How can technology improve water use in food systems? and how to enhance/ improve water quality to ensure food safety?



ANNEX 2: AGENDA OF THE DIALOGUE

Tuesday, 6 July 2021	
5:00 – 5:05	WELCOMING REMARKS Ms. Maya Atieh, LYPW Ms. Julie Abouarab, ESCWA
5:05- 5:10	PRESENTATION ON THE FOOD SYSTEMS SUMMIT Ms. Zeina Abi Aad, LYPW
5:10 – 5:55	HOW CAN TECHNOLOGY IMPROVE WATER USE IN FOOD SYSTEMS? <ul style="list-style-type: none">• Presentation by Dr. Roula Bashour, AUB• Interactive discussion using MURAL application, and identification of actions
6:00 – 6:45	HOW TO ENHANCE/IMPROVE WATER QUALITY TO ENSURE FOOD SAFETY? <ul style="list-style-type: none">• Presentation by Dr. Ibrahim Alameddine, AUB• Interactive discussion using MURAL application, and identification of actions
6:45 – 7:00	CLOSING REMARKS Ms. Maya Atieh, LYPW Ms. Julie Abouarab, ESCWA

ANNEX 3: LIST OF PARTICIPANTS

Jordan

Ms. Ala'a Thalji AlSoudi

Trainer in Soilless Farming and Research Assistant
Email: alaa_th2015@outlook.com

Mr. Abdallah Hussein Bakir

Geologist / Student
Email: ahb13n@gmail.com

Ms. Leen Fariz

Student
University of Toronto
Email: farizleen@gmail.com

Lebanon

Mr. Abdallah Bakir

Email:

Ms. Amar Moussawi

WIL Lebanon participants
Email: gamarmsw2000@gmail.com

Mr. Bashar Raydan

Student
United World College
Email: basharraydan.ccss@gmail.com

Mr. Hadi Merhi

Student
American University of Beirut (AUB)
Email: hadimerhi001@gmail.com

Mr. Jawad Taher

WeWorld-GVC
Email: jawad.taher@gvc.weworld.it

Ms. Juliette Samman

Platform Coordinator
LEWAP
Email: Juliette.samman@pseau.org

Dr. Laury Acaf

Email: laury.acaf@gmail.com

Mr. Makram El Bachawati

Assistant Professor
University of Balamand
Email: makram.bachawati@balamand.edu.lb

Dr. Marianne Saba

Researcher
University of Balamand
Email: marianne.saba@balamand.edu.lb

Dr. Michel Afram

Agricultural research
PDG of LARI
Email: lari@lari.gov.lb

Mr. Mohammad Smaily

LAMP
Email: mhmmdsmaily@gmail.com

Mr. Mohammad Radwan Cherri

Civil and Environmental Engineer
Email: Mohamadcherri1@hotmail.com

Mr. Mustafa Al Ajami

LAMP
Email: ajami22.lamp@gmail.com

Mr. Rami Charari

Shelter WASH project coordinator
Norwegian Refugee Council
Email: rami.charari@nrc.no

Ms. Rania Bou Said

WIL Lebanon participants
Email: Rania.bosaid@gmail.com

Ms. Rim El-Khatib

Management trainee
Mefosa
Email: managementtrainee.mefosa@gmail.com

Ms. Rita Al Hachach

Student
Lebanese University
Beirut, Lebanon
Email: Ralhachach@gmail.com

Ms. Sarah Dia

Project lead
Waterlution
Email: sad20@mail.aub.edu

Ms. Siwa Houdaib
Email:

Mr. Wiam Soukarieh
WASH Officer
WASH
Email: Wiam.soukarieh@nrc.no

Olwale Ogunsola
Beirut, Lebanon
Email

Arabi
Beirut, Lebanon
Email

American University of Beirut (AUB)

Dr. Roula Bachour
Research Associate
American University of Beirut (AUB)
Beirut, Lebanon
Email: rb63@aub.edu.lb

Dr. Ibrahim Alameddine
Assistant Professor
American University of Beirut (AUB)
Beirut, Lebanon
Email: iao4@aub.edu.lb

Lebanon Youth Parliament for Water (LYPW)

Ms. Maya Atie
President
Email: mayaatieh@hotmail.com

Ms. Saniya El Nakib
Committee member
Email: saniyaelnakib.11@gmail.com

Mr. Mohamad Abbas
Committee member
Email: mhamad.f.abbas@gmail.com

Ms. Zeina Abi Aad
Secretary
Email: abiaadzeina@gmail.com

**United Nations Economic and Social Commission
for Western Asia (UN-ESCWA)**

Ms. Reem Nejdawi
Chief, Food and Environment Polices Section
FEPS/CCNRSC
E-mail: nejdawi@un.org

Ms. Julie Abouarab
Associate Coordination Officer
FEPS/CCNRSC
E-mail: abouarab@un.org

Ms. Layale Gedeon
Research Assistant
FEPS/CCNRSC
E-mail: gedeon1@un.org

Ms. Rita Wehbe
Research Assistant
FEPS/CCNRSC
Email: wehbe@un.org

Ms. Aya Ibrahim
Research Assistant
WRS/CCNRSC
Email: aya.ibrahim@un.org

ESCWA Mailing Address

United Nations Economic and Social
Commission for Western Asia (UN-ESCWA)
UN House
P.O. Box: 11-8575
Riad El-Solh 1107 2812
Lebanon
Tel.: (+961-1) 981501/2