Water Energy Food Nexus to Curtail Future Food Uncertainties

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Overview

1 in 3 people or 2.2 billion people around the world lack safe drinking water

Over 2 billion people live in countries experiencing high water stress. (UN, 2018)

700 million people worldwide could be displaced by intense water scarcity by 2030. (Global Water Institute, 2013)

About 60 percent more food will be needed by 2050 to meet the food requirements of a growing global population.

Sustainable intensification of food production with efficient resource utilization to reduce the productivity gap
Water Key Facts

Half of the world’s population is already experiencing severe water scarcity at least one month a year.

1 out of 4 healthcare facilities worldwide lack basic drinking water services (2016).

By 2030, 700 million people could be displaced by intense water scarcity.

2 billion people live in countries experiencing high water stress.

785 million people remain without even basic drinking water services (2017).
Water stress

Water stress, ratio of withdrawals to supply, 2040*, %

- Below 10
- 10-20
- 20-40
- 40-80
- Over 80

Economist.com  Sources: OECD; World Resources Institute  *Forecast
Importance of water for global food security

Water needs per person in litres per day

FAO, 2003
Global average water footprint of food production, which includes water requirements across its full supply chain and the quantity of freshwater pollution as a result of production.
Energy Key Facts

The number of people without electricity access dropped to 860 million in 2018

IEA, 2019
Food Key Facts

Year wise number of undernourished people in the world

- Prevalence (percentage)
- Number (millions)

* Projected values, illustrated by dotted lines and empty circles.
SOURCE: FAO.

FAO, 2018
Regional Food Security challenges

**Source:** FAO, 2018
Role of Food Loss and Waste in Global Food Security

✓ Reduce Food Loss and Waste (FL&W)

1. Reduce Food Loss and Waste (FL&W)

2. Cereals and Pulses

3. Fruits and Vegetables

4. Meat and Animal Products

5. Roots, Tubers and Oil-bearing Crops

6. Other

7. Percent share of Food Loss during production by commodity groups (FAO, 2019)

YEARLY ONE THIRD OF FOOD PRODUCED IN THE WORLD IS LOST OR WASTED FROM FARM TO FORK

8% GHG EMISSIONS

0.83 TRILLION M³ OF WATER OUT OF 2.5 TRILLION M³

10% OF GLOBAL ENERGY BECAUSE 30% OF GLOBAL ENERGY IS USED BY AGRI-SECTOR

1.63 GLOBAL HA LAND OUT OF 4.9 GHA

WORTH OF FL&W IS $940 BILLION PER YEAR

VOLUME OF THE FOOD IS 1.3 BILLION TONNES

FAO, 2019
Water Energy Food Nexus

UNU, 2013
Advantages of Water Energy Food Nexus

01 Increase the resource use efficiency

02 The idea of Nexus attract smart investment

03 Significantly contribute towards global food security by responsible use of water & energy

04 Improve the decision making by identifying synergies between water, energy and food
Sustainable Development Goals (SDGs)
Stakeholder dialogue with respect to resources

Social economic & environmental goals

Water
Energy
Food

Population growth
urbanization
Climate challenges

Governance
Sectoral policies
Agriculture
Technology innovation

Stakeholder Dialogue

Resource Base

Land – water – energy
Capital labor

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WEF Nexus Solution

1. Inter-Institutional Dialogue on WEF Nexus

2. Involvement of Regional competent Players

3. Developing joint working group

4. Date access

5. Data interpretation

6. Nexus policy development

7. Introduce measures to promote Nexus approach

Thinking to Acting
Proposed Actions at G20 MACS 2020

AIMS

1. Ways to strengthen research cooperation about the novel approaches to be adopted to rationalize the use of valuable finite resources.
2. Promote the idea of WEF Nexus from THINKING to ACTING
3. Exchanging view about good practices, and best experiences for WEF Nexus

Outcomes

✓ Sharing valuable knowledge in balancing the use of water and energy for food production
✓ Exchange views and best practices for effective and efficient utilization of global resources

Planned Activity (Open event)

✓ International Workshop later in the year in collaboration with interested members and Invitees
Thanks...