

CIRCULAR BIOECONOMY GOOD PRACTICES FOR A GREEN RECOVERY FROM THE COVID 19 CRISIS

Anne Bogdanski. Natural Resources Officer, FAO

**A CIRCULAR BIOECONOMY: PROVIDING SOLUTIONS TO THE EU GREEN RECOVERY PLAN
TUESDAY 9 JUNE 2020, 16:00-17:30, GO-TO-WEBINAR**

HOSTED BY MEP FRANC BOGOVIČ, CHAIR OF THE “BIOECONOMY” WORKING GROUP OF THE EUROPEAN PARLIAMENT INTERGROUP ON ‘CLIMATE CHANGE, BIODIVERSITY AND SUSTAINABLE DEVELOPMENT’



**Food and Agriculture
Organization of the
United Nations**

I. CHALLENGES: COVID 19 AMIDST CLIMATE CHANGE & AIR POLLUTION

■ Triple crisis:

- The COVID 19 crisis has infected 7 million people and killed 400,000 in 6 months.
- Climatic change has been estimated to cause over 150,000 deaths annually,. Between 2030 and 2050, climate change is expected to cause approximately 250 000 additional deaths per year, from malnutrition, malaria, diarrhea and heat stress.
- Air pollution, that is the combined effects of outdoor and household air pollution, cause around 8 million - one in eight - premature deaths every year, largely as a result of increased mortality from stroke, heart disease, lung disease, and cancers.

■ They are mutually reinforcing:

- Air pollution aggravates deaths from COVID 19 and contributes significantly to climate change.

Search ▾

International edition ▾

The Guardian

World health leaders urge green recovery from coronavirus crisis

Open letter to G20 leaders says addressing climate breakdown key to global revival

- [Coronavirus - latest updates](#)
- [See all our coronavirus coverage](#)



Researchers found significant association between air pollution and COVID-19 deaths ([Wu et al., 2020](#)).

Because COVID-19 has been linked to air pollution and smoking, it is likely that there is an association between indoor cooking with biomass and COVID-19 ([Afshari, 2020](#)).

A recent study by Conticini and colleagues indicated that a higher prevalence and mortality of COVID-19 in Northern Italy could be partly explained by exposure to a higher level of air pollution ([Conticini et al., 2020](#)).

A study found that patients with Sars, a respiratory virus closely related to Covid-19, were 84% more likely to die, if they lived in areas with high levels of pollution ([Cui et al., 2003](#)).

AGRICULTURE AND FOOD PRODUCTION

- Currently, the agriculture and forestry sectors contribute around 24% of all global greenhouse gas emissions.
- The agriculture sector is responsible for around 40% of global black carbon and anthropogenic methane emissions.
- Most emissions stem from livestock production, paddy rice farming and land use change, including the burning of biomass



Delhi's smog blamed on crop fires - but farmers say they have little choice

Movistar 18:20 22%

google.es

BusinessLine

Opinion > Quick Take

Something's burning: North India's smog, a cauldron of faulty policies

Updated on November 05, 2019

f t w e

2. POTENTIAL SOLUTIONS: GREEN RECOVERY AND THE CIRCULAR BIOECONOMY



A **green recovery** in the food and agriculture sector needs to be built on three pillars:



1. Economic recovery



2. Increased resilience



3. Mitigation of health risks



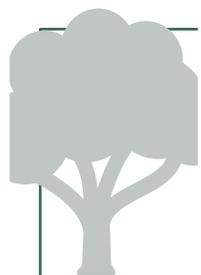
A sustainable and circular bioeconomy can and should contribute to these goals.



Design out waste and
pollution across the
value chain



Keep products and
materials in use



Regenerate natural
systems

CIRCULAR
BIOECONOMY
GOOD
PRACTICES

Alternatives to burning straw (China)



Type of intervention:

- ▶ Government programme

Since: 2016

Stakeholders involved:

- ▶ Leading parties: National- province- and county-level governments
- ▶ Beneficiaries: Organizations of farmers, manufacturers, others
- ▶ Others: Service organizations

BASIC INFORMATION

- ▶ The Ministry of Agriculture and the Ministry of Finance have selected ten provinces to implement pilot projects to test and promote the use of straw and prohibit its burning. The pilots are carried out during the 13th Five-Year Plan (2016-2020).
- ▶ The aim is to reduce air pollution from burning straw and create an ecological barrier that prevents the pollution from spreading to large cities.
- ▶ Each provincial government selects key counties for the pilots. The uses of straw are scientifically determined based on local conditions. Emphasis is given to farm-oriented uses of straw. Examples include: the use of straw as fertilizer to increase soil organic matter and improve the quality of cultivated land; as fodder; and for energy production in rural areas to improve livelihoods.
- ▶ The national government provides guidance through policies and measures (e.g support for purchasing machinery, storage and transportation) that expand industries and technologies that use straw. A technical support system and advisory service has been established at the provincial level to support technologies and build knowledge. At the county level, technical models are promoted based on the specific characteristics of the area.

BIOMASS VALUE CHAIN

Biomass production and/or collection:

Crop residues, mainly corn, rice and wheat straw

Biomass and bioproducts processing and use:

Solid biofuels; biogas; biofertilizer; fodder; substrate for mushroom or plant cultivation; artificial boards, composite material and paper; biochemicals

Sustainable end-of-life options and cross-cutting circularity aspects:

- ▶ Agricultural residues are used as feedstocks instead of being burnt
- ▶ Straw used as fertilizer and feed contributes to circulating nutrients through agricultural production systems

ALTERNATIVES TO AGRICULTURAL BURNING, CHINA:

WHEAT AND RICE STRAW TO FERTILIZERS, FODDER, BIOENERGY, BIOCHEMICAL AND COMPOSITE MATERIALS

Bio-industrial clusters to add value (Malaysia)



Type of intervention:

- ▶ Government programme
- ▶ Private sector activity

Since: 2005

Stakeholders involved:

- ▶ Leading parties: Bioeconomy Corporation (public agency)
- ▶ Beneficiaries: Low-income farmers and bio-industries
- ▶ Others: Projects collaborators

Sectors:

- ▶ Agriculture sectors
- ▶ Food and agro-industry
- ▶ Bio-based construction materials
- ▶ Bio-based chemicals and polymers
- ▶ Healthcare and biopharmaceuticals
- ▶ Bioenergy
- ▶ Waste management

BASIC INFORMATION

- ▶ Palm Oil Industrial Clusters (POICs) are industrial networks for all biomass-based related activities in which biorefineries and bio-industries have a central role in value addition in downstream biomass processing.
- ▶ Centralized shared infrastructures and utilities are developed in the POICs, which improves logistics, decreases transportation costs and allows for large-scale biomass mobilization, which is critical for attracting bio-based chemical companies into the POIC.
- ▶ The value of the POIC lies in its proximity to the feedstock and industrial plants. The strategic location includes shipping routes to suppliers and markets, abundant biomass in neighbouring areas and proximity to processing facilities and bio-industries.
- ▶ It is an important stakeholder platform that includes companies, estate owners, millers, technology providers and financial investors. Working through this platform, the stakeholders facilitate innovation that can diversify businesses and promote investments in downstream and upstream activities.
- ▶ POICs follow the AIM'S Biomass Joint Venture Cluster model and receive support from AIM. It was also developed within the national Bioeconomy Transformation Programme. The POICs are part of a wider 'Sabah State economic corridor'.
- ▶ Companies in the POICs and cooperatives can access various government support programmes that support the implementation of bioeconomy initiatives. An example of such a programme is the Bio-accelerator Programme, which is designed to enhance participants' commercial profile in the marketplace.

BIOMASS VALUE CHAIN

Biomass production and/or collection:

Oil palm fresh fruit bunches and other oil palm biomass, and by-products from the palm oil biorefinery

Biomass and bioproducts processing and use:

Palm oil; oleochemicals; trans-free food; nutraceuticals; phytonutrients; solid biofuel; biodiesel and biogas

Sustainable end-of-life options and cross-cutting circularity aspects:

Each cluster has a common waste management plant to treat residues from industries operating within the cluster

RESULTS OF THE REVIEW

REDUCE
METHANE FROM
PALM OIL
EFFLUENT :

WASTE
MANAGEMENT
PLANS FOR PALM
OIL INDUSTRIAL
CLUSTERS

3. FAO PROVIDES SUPPORT TO COUNTRIES



- FAO guides countries in the development of circular bioeconomy strategies and programmes
- Support provided by the German Ministry of Food and Agriculture since 2015
- In 2016, an FAO-led International Sustainable Bioeconomy Working Group (ISBWG) to support knowledge exchange between its members regarding sustainable and circular bioeconomy.
- Currently working in Namibia, Uruguay and the ASEAN.

4. FAO AND THE EU GREEN DEAL

Ongoing areas of work and interest on Sustainable and Circular Bioeconomy between FAO and the European Commission, in line with the EU strategies on Bioeconomy, Farm2Fork, Biodiversity and Circular Economy:

1. With the Joint EU-FAO FIRST Policy Assistance Programme – Investing in food security and nutrition, sustainable agriculture, and building resilient food systems
2. With the EU-led International Bioeconomy Forum – Raising the awareness about the role of microbiome science and innovation for sustainable food systems
3. With the Joint Research Centre - Guidance Note on Monitoring the Sustainability of Bioeconomy
4. With members from DG Research and BBI-JU - FAO-led International Sustainable Bioeconomy Working Group, highlighting areas of particular concern such as Designing out Agro-plastics and Promoting alternative sources of protein

5. KEY MESSAGES

- The COVID-19 pandemic has stressed the need for a **resilient food system** that can ensure stable access to a sufficient supply of safe, nutritious and affordable food.
- It has also made us aware of the **synergies and trade-offs** between our health systems, ecosystems, supply chains, consumption patterns and planetary boundaries. The true cost is food becoming more and more visible.
- The **EU's Green Deal** and more precisely the Farm2Fork Strategy support a circular bioeconomy in the EU and through international cooperation. As written in the Farm2Fork Strategy:
 - “The current pandemic is just one example. **Climate change** and the increasing recurrence of droughts, floods, forest fires and new pests are a reminder that our food system is under threat and must become more sustainable and resilient.
 - The **circular bioeconomy allows for a transition to sustainable food systems**, which is still a largely untapped potential for farmers and also a **huge economic opportunity.**”
- The **UN Food System Summit 2021** will be another milestone on the way to more resilient and circular food systems.

THANK YOU FOR YOUR ATTENTION!

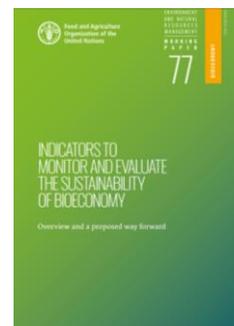
Contact:

Annekatrin.bogdanski@fao.org

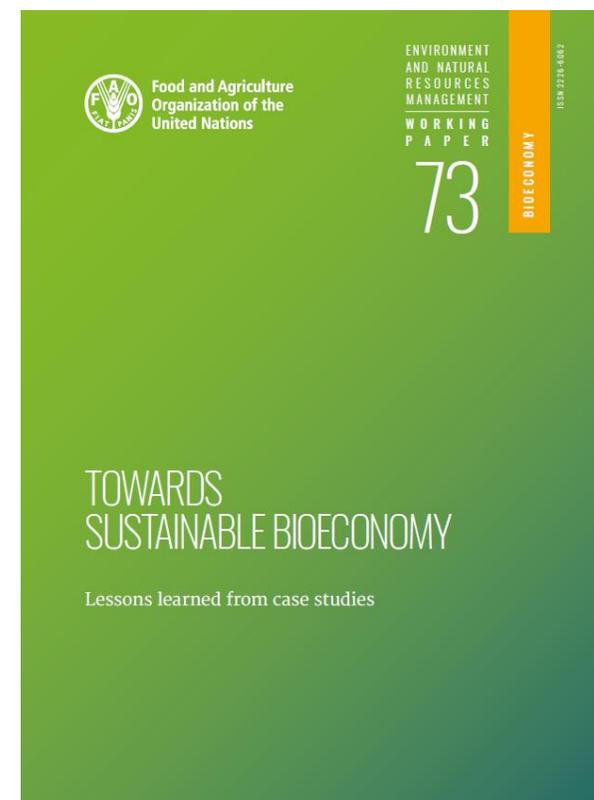
<http://www.fao.org/climate-change/our-work/areas-of-work/bioeconomy/en/>



<http://www.fao.org/3/ca6767en/CA6767EN.pdf>



<http://www.fao.org/3/ca4352en/ca4352en.pdf>



<http://www.fao.org/3/ca6048en/ca6048en.pdf>