

Agricultural Burning in Asia: Impacts and Solutions

Highlights of the KSE on 'Agricultural Burning:
Sectoral to Regional Impacts and Solutions' (27 Apr 2023)

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Agricultural burning

- identified as a significant contributor to air pollution and climate change
- continues to raise *environmental, health, and economic concerns* at the sectoral, local, national, and regional levels due to the scale of its impacts and the need for cross-cutting solutions
- *sustainable solutions*
 - careful balance of applying air quality management approaches
 - that must be integrated with agricultural practices, community behavior, and availability of resources for implementing solutions

SPEAKERS



Event Overview

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Air Quality and Climate Change
Science Lead
Clean Air Asia



Setting the Scene: Extent and Impacts of Agricultural Burning in Asia

Tanmoy Mukherjee
Air Quality Specialist
Clean Air Asia



Initiatives on Addressing Agricultural Burning

Dang Casanova
Program Manager
Clean Air Asia



Measures to control agricultural burning in China

Wendao Cao
Senior Agriculture Economist
World Bank



Challenges and solutions on crop residue management to avoid agricultural burning in South Asia

Takashi Takahatake
Economic Affairs Officer
South and South-West Asia Office
UNESCAP



Challenges in the Implementation of Available Solutions to Reduce Open-Burning of Agricultural Residues and the Way Forward

Supat Wangwongwatana
Former Director General, Thailand
Pollution Control Department,
and Lecturer, Thammasat
University



PANELISTS



Takashi Takahatake
Economic Affairs Officer
South and South-West Asia Office
UNESCAP



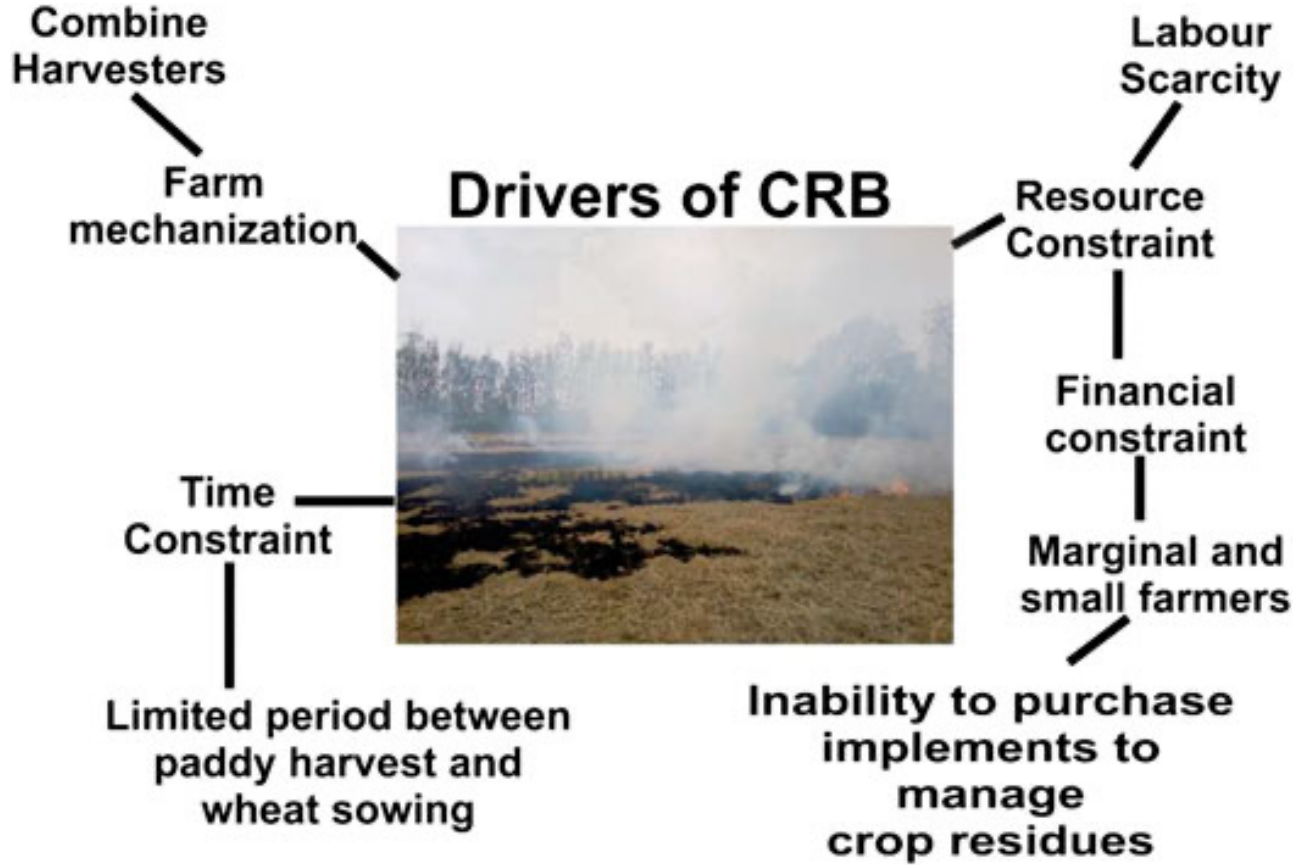
Md. Ziaul Haque
Director
Department of Environment, Bangladesh



Hadika Jamshaid,
Carbon Market and NDCs Advisor
Ministry of Climate Change,
Pakistan



General drivers of crop residue burning (CRB)



Taken from the presentation of Dr. Tanmoy Mukherjee, Clean Air Asia (27 April 2023)

Venkatraman et_al 2021



Initiatives on Addressing Agricultural Burning

- **ASEAN Agreement on Transboundary Haze Pollution**
 - Roadmap on ASEAN Cooperation towards Transboundary Haze Pollution Control
 - “Transboundary Haze-Free ASEAN by 2020”
- **Malé Declaration on Control and Prevention of Air Pollution and its likely Transboundary Effects for South Asia (MD)**
 - <http://www.sacep.org/programmes/male-declaration>
- **Climate and Clean Air Coalition Agriculture Hub**
- **International Rice Research Institute (IRRI) Sustainable Rice Straw Management**

Taken from the presentation of Ms. Dang Casanova, Clean Air Asia (27 April 2023)



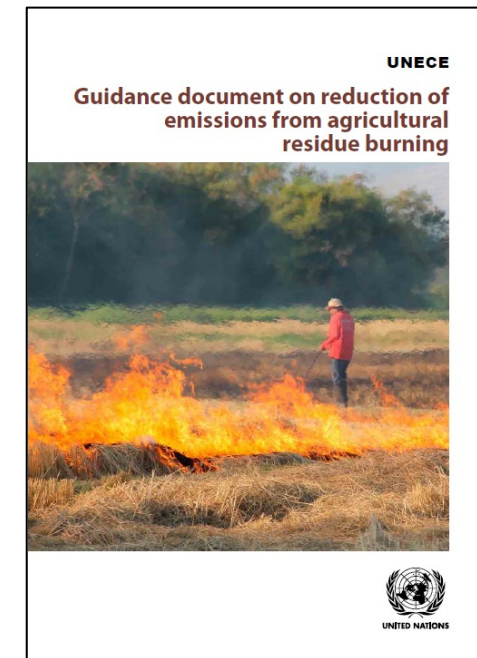
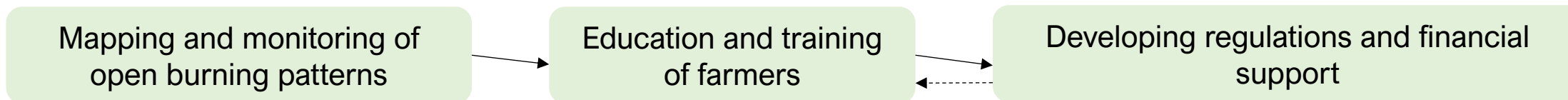
Initiatives on Addressing Agricultural Burning

- **UNECE Guidance document on reduction of emissions from agricultural residue burning**

Available alternative to agricultural residue burning

- Conservation Agriculture, Low-till practices, Alternative use practices (animal feed and bedding and bioenergy)

Integrated Approach to fire-free agricultural systems



Taken from the presentation of Ms. Dang Casanova, Clean Air Asia (27 April 2023)



Key measures to better utilize crop straw residues in China

- The Party Central Committee and the State Council ensures comprehensive utilization of crop straw: **phased task goals and clear responsibility mechanism**
- **Promote more scientific, efficient, and valuable utilization of crop straw**
- **Improve laws and regulations**
 - The revised Air Pollution Prevention and Control Law clearly requires people's governments at all levels and their agricultural departments to take measures to promote the comprehensive utilization of straw.
- **Establish a service system** for straw collection, storage, transportation, and comprehensive utilization at county-level
- **Provide central government's budget transfer to pilot comprehensive crop straw utilization as high as RMB 3 billion yuan annually**

Taken from the presentation of Dr. Wendao Cao, World Bank (27 April 2023)



Common challenges and gaps in management of crop residues

In-Situ Management

- **Use of combine harvesters**
- Non-availability of high hp (≥ 50) tractors
- Expensive and seasonal CRM machinery use
- Demand-supply gap - local machine manufacturers unable to meet farmers' needs
- Need additional management skills
- **Lack of conservation agriculture adoption**
 - Apprehension of yield loss/returns
 - Negative attitudes or perceptions

Ex-Situ Management

- **High cost of residue collection and transportation**
- Lack of assured residue supply as well as **markets for processed by-products**
- Lack of network of collection centres and supply chain management facilities
- **Lack of technical and economic feasibility studies**

Other common issues

- **Lack of statistical info on availability, utilization and surplus crop residues resources**
- **Lack of crop residue management policy**
- Subsidy & financial support to farmers and entrepreneurs
- Need for **incentives to farmers for not burning crop residues**

Taken from the presentation of Dr. Takashi Takahatake, UNESCAP (27 April 2023)



Good practices on addressing agricultural burning in Thailand

Organic fertilizer bank
Bann Yang Tai Village,
Si Satchanalai District,
Sukhothai Province



Utilizing byproducts from maize farms for cultivation of organic mushroom
Ban San Rungrueang Community

Promotion against burning in farmlands
Mae Ku Sub-district,
Mae Sot District,
Tak Province



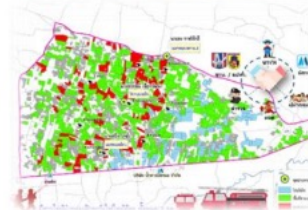
Promotion against burning of farming materials by Agricultural Learning Center (ALC) in Nakhon Nayok Province

Adding value to farmlands and contributing to reduction of open burning and environmental protection
Ban San Rungrueang Community
of Nan Province



Mae Chaem Model Plus for reducing areas subjected to burning and adding more forest lands
Ban Thap Sub-district, Mae Chaem District, Chiang Mai Province

Development of compressed sugar leaves and shots tablets as fuel materials
Faculty of Engineering King Mongkut's
University of Technology North
Bangkok



Mega Farm Enterprise at Chaeng Ngam Sub-district
Nong Ya Sai District, Suphan Buri Province

Taken from the presentation of Dr. Supat Wangwongwatana, former PCD (27 April 2023)



Key takeaways

- Agricultural waste burning is **not just an environmental problem but an economic and health problem**
 - burning will be continued and will increase with higher demands for food/crop production
- We therefore need to **find and implement solutions by understanding the current solutions and practices, and fitting it in the local context**
 - in some cases, it is already happening and it is a matter of scaling up efforts



*Slash and Burn Agriculture in South East Asia,
Photo by [Artyom PJ](#) on [Unsplash](#)*

Key takeaways

- **Farmers have a crucial role in addressing agricultural burning**
 - they are performing the practice and at the same time also affected by the impacts of burning
 - burning is considered as the easiest and fastest option to meet the short time period between harvesting and planting crops
 - we have to understand the context of the farmers' situation and awareness, capacities, belief system, and access to technologies and interventions
- Other stakeholders that play an important role
 - (1) **government**: developing and enforcing related policies
 - (2) **NGOs**: raising awareness and linking resources and opportunities
 - (3) **private sector**: providing technologies and linking with business communities



Photo from [Unsplash](#)

Key takeaways

- Awareness raising, changing of mindsets (e.g., that burning is good for the soil) and providing mechanisms are important to avoid agricultural burning
- It is key that farmers see and experience the disincentives of burning and the economic incentives of the solutions
- It is important to have sharing of best practices through various platforms so that countries can learn from each other

Thank you for your attention!

For more information, please visit

<https://events.development.asia/learning-events/agricultural-burning-sectoral-regional-impacts-and-solutions>

or email everlyn.tamayo@cleanairasia.org