

# ASIA PACIFIC CLEAN AIR PARTNERSHIP NEWSLETTER

Issue 10 | March 2021



Photo by  
The MeshMinds Foundation

## AWARENESS THROUGH ART: CLEAN AIR SOLUTIONS AT MOO MOO PARK

The Asia Pacific Clean Air Partnership (APCAP) participated in Moo Moo PARK, Asia's first drive-through art exhibition in Singapore from 22 January to 28 March 2021.

Presented by the Singapore Chinese Cultural Centre in collaboration with The MeshMinds Foundation, the exhibition is inspired by the Year of the Ox with a focus on the Agenda 2030 Sustainable Development Goals, such as air pollution and sustainable mobility. It also showcased the 25 clean air measures, specifically promotion of electric mobility, with visitors able to visit while riding in an electric car as a novel way to enjoy art and culture.

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Moo Moo PARK uses interactive and immersive technologies to feature artworks that transformed digital drawings to 3D installation art, selfie filters and augmented reality (AR) murals powered by Spark AR from Facebook. You can also experience the artwork in AR! To find out more, please visit <https://singaporeccc.org.sg/moo-moo-park/>

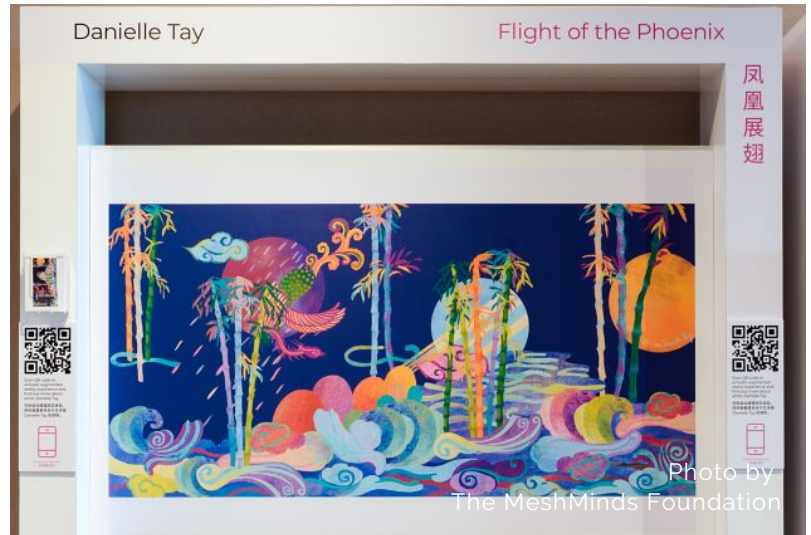


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## 《牛牛派对》通过艺术传达空气污染信息

亚太清洁空气伙伴关系（APCAP）参与了亚洲首场“得来速”展览《牛牛派对》，展览一直开放到3月28日。

本次展览由新加坡华族文化中心与The MeshMinds Foundation联合举办，以牛年和可持续发展主题为灵感。它展示了25项清洁空气措施，包括促进环保交通的电动汽车让访客乘坐观展，以一种新颖的方式欣赏艺术，体验文化。

《牛牛派对》结合了沉浸式科技和电动车，将展出的原创作品以脸书Spark AR为平台，从数码图像转化为3D装置艺术、自拍滤镜和增强实境壁画。通过网路也能亲自体验这些艺术作品！更多详情，请浏览

<https://singaporeccc.org.sg/zh-hans/moo-moo-park/>。

This Chinese translation was kindly provided by the Singapore Chinese Cultural Centre.



Photo by  
The MeshMinds Foundation

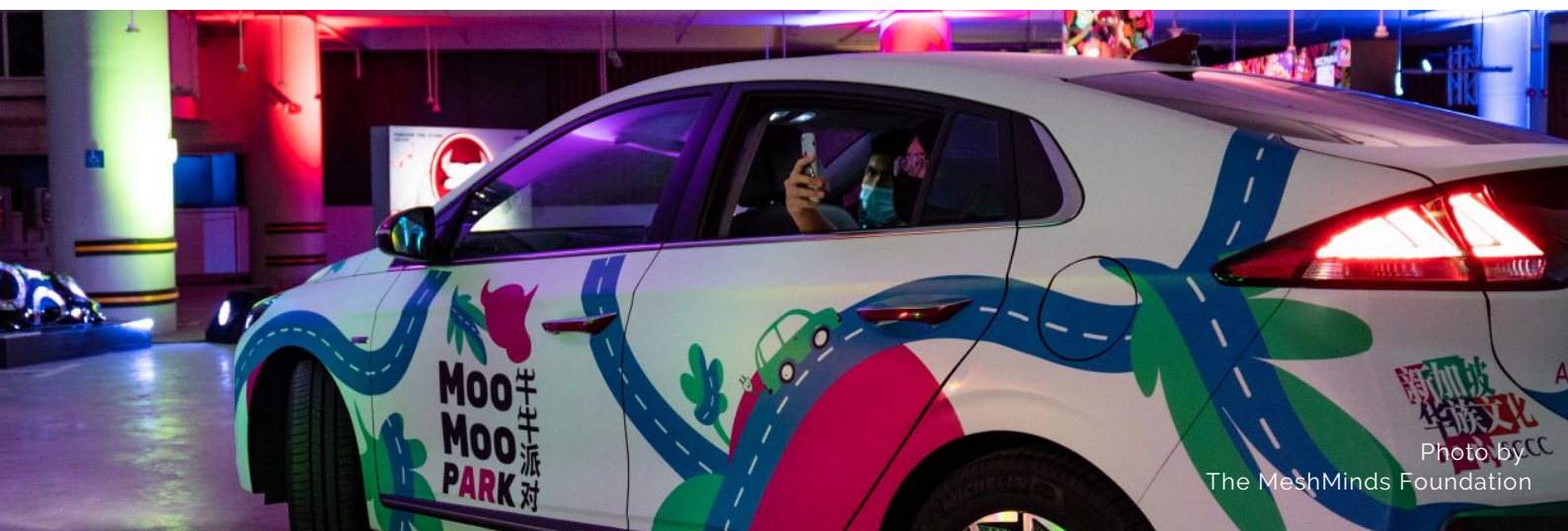


Photo by  
The MeshMinds Foundation

# SUPPORTING HANOI IN ADDRESSING OPEN BURNING FROM AGRICULTURAL CROP RESIDUES

February 2021

In 2019, the population weighted PM2.5 concentration in Hanoi exceeded the national air quality standards, according to the Center of Multidisciplinary Integrated Technologies for Field Monitoring (within the framework of USAID's "Collective Actions for Clean Air" project). Open burning of agricultural residues in Hanoi has attracted attention in recent years as they contribute to increase of air pollution. Hanoi Environmental Protection Agency has recognized open burning as one of 12 key air pollution sources in the city.

Addressing open burning from agricultural crop residues and municipal solid waste is among the 25 recommended clean air measures. APCAP, Live and Learn and the Vietnam Clean Air Partnership supported the Hanoi Department of Natural Resources and Environment in addressing the pervasive issue of open burning of agricultural crop residue in the city through policy advise and knowledge sharing.



A baseline assessment on open burning was conducted in 7 suburban districts of Hanoi which have been previously found to have prevalent straw burning. The survey found that in these areas, the rate of burning for spring crop season is slightly higher compared to summer crop season (rate of 40.7% compared to 38.1%). The main reasons for burning are: burning straw for ash fertilizer; to clear the field; convenient plowing, and to lack of for straw collectors and buyers. On average, a household harvests around 1 tonne of rice and earns 5 million VND (~210 USD). As such, it is difficult for farmers to invest in the treatment of straw after harvest.

The “Stakeholder Workshop: Straw Burning in Hanoi’s Suburban Districts – Current Situation and Solutions” was organized on 27 January 2021. The meeting discussed the results of baseline assessment and proposed solutions for effective implementation of Hanoi People’s Committee Directive No. 15 / CT-UBND dated 18 September 2020 which sets the goal of full ban of rice straw open burning by January 2021.

The workshop discussed different solutions available, but highlighted the importance of engaging with local community. Some of the recommendations include:

- Include non-burning of straw and crop residues as an issue to be discussed during village meetings and with local authorities. Rice farming households to need pledge not to burn rice straw and take measures to treat the straw after harvest.
- Establish a credit program to support stubbles treatment and flip-plowing in combination with soil tillage and composting technology, mushroom growing or other forms of useful straw reuse.
- Form a production area to prohibit burning of straw and crop residues and return them as organic matter to the soil. Monitor straw collection, treatment and management after each harvest season.
- Build and implement the production chain of cultivation, including the consumption market of crop products and residues.



One of the next steps proposed is to organize science-policy dialogue on the application of the 25 clean air measures in Hanoi and other cities in Vietnam.

For more information, visit this [link](#) (only available in Vietnamese).



# CLEAN AIR SOLUTION IN FOCUS: BETTER MANAGEMENT OF AGRICULTURAL CROP RESIDUES

## THAI FARMERS PARTICIPATION IN ADDRESSING BIOMASS OPEN BURNING FOR CLEANER AIR

Agriculture remains as the predominant economic activity in Thailand and there are lands used for cultivation of commercial crops in each region. The practice of burning crop fields and residues has become popular in harvesting sugarcane, preparing fields for rice cultivation, and clearing land for maize farming. Burning of lands was found in 47% of lands used for cultivation of sugarcane, 57% of areas used for off-season rice farming, 29% of paddy fields for in-season farming and, 35% of lands used for maize farming.

Most farmers still consider burning as a viable option for cost saving, reducing labor cost, minimizing duration of cultivation, enabling more efficient harvest and transportation, aiding pest control, removing weeds and facilitating tillage. Despite the introduction of machinery as an alternative to burning, utilization, purchase and maintenance of farming machinery were often found to be too costly for farmers.

**Open burning in agricultural lands is one of the most common sources of air pollution in both rural and urban areas.** State and other sectors recognize the problem and included this in the national agenda since the end of 2019. Cross-sectoral actions have also been taken to control, regulate and reduce pollution at source and minimize their impacts on public health.

Although open burning of agricultural biomass is considered as an important source of PM<sub>2.5</sub>, its contribution to PM<sub>2.5</sub> varies in different regions. For example, PM<sub>2.5</sub> in the north and northeastern regions mostly comes from open burning while in big cities, such as Bangkok, it is estimated that open burning contributes about 32% to PM<sub>2.5</sub>, within the same range as transport (about 33%) (Dr. Supat Wangwongwatana, analysis from Nguyen Thi Kim Oanh, 2007 and 2017). There is a need to consider the impact of open burning to air pollution in different areas.

Agricultural by-products can contribute to the richness of agricultural ecosystems, provided that they are appropriately utilized and managed. Farmers, interested individuals, and





# CLEAN AIR SOLUTION IN FOCUS: BETTER MANAGEMENT OF AGRICULTURAL CROP RESIDUES

government agencies have adopted techniques and management tools in enabling good practices for the reduction of burning in cultivation areas. Wider adoption of these practices might be needed. This would require creating more incentives, promoting marketing mechanism and measures to provide additional value for investment.



Introduction of baler machines and sugarcane leaf pruning machines to framers in Mae Ku Sub-district of Tak Province enable them to sell compressed leaves to local biomass power plants and earn extra income of between 800 and 1000 baht per 1,600 square meter. In addition, machinery can reduce the time used in farming by 3 folds and decrease labor requirement by 10-20%.



Farmers at Baan Yang Toi Village of Sukhothai Province deposit farming by-products at a compost bank. The compost produced and distributed contribute to improve soil fertility, reduce reliance on chemical fertilizers and minimize open burning at the village.

Thailand Environment Institute, Pure-Earth and other relevant organizations carried out a project to develop guidance for management of open burning in cultivated areas as an effort in address PM2.5 in Thailand. Outcomes of the project indicated that **emissions from open burning generally occurred in the harvest season for sugarcanes, rice and maize between the months of November and March.** The project recommended relevant agencies to focus on the source of particulate pollution, on enhancing effectiveness of burning management and on minimizing burning itself as much as possible.





# CLEAN AIR SOLUTION IN FOCUS: BETTER MANAGEMENT OF AGRICULTURAL CROP RESIDUES

Principles of pollution management can be applied to guide the comprehensive management of open burning in cultivated areas as an effort in addressing PM2.5 problems:

- **Burning prevention:** burning-free farming must be promoted and supported by encouraging environmentally friendly production and providing technology support in farming areas.
- **Use of agricultural by-products** by developing innovations to add value to the materials, adopting circular economy concepts and identifying potential markets for the materials.
- **Burning reduction** by employing mechanisms at the local level such as local provisions, rapid-response units for surveillance and monitoring, and provincial centers for burning management to meet administrative requirements and issue necessary commands.
- **Burning control:** open burning, only if necessary, must be regulated with planning and notification requirements, reorganizing farmlands to accommodate use of machinery, designating areas where burning is prohibited, ensuring effective enforcement as well as managing and eliminating risks from burning at particular sites and their adjacent areas.

Changing farmers' behavior on burning remains a challenge. Most farmers are small-scale, self-employed and low income operators without land of their own. Measures cannot be accomplished within a brief period since it concerns cost of production and traditional practices.



Photo by TEI

Overall, this would also require a combination of policy, technology, finance, and other measures implemented in the short, medium, and long term. This may be coordinated by a specific authority to ensure sustainable contribution of all stakeholders to manage burning in agriculture sector and address PM2.5 problems.

This article is a contribution from Thailand Environment Institute (TEI).  
For more information, visit <http://www.tei.or.th/en/index.php>



Photo by TEI



# **CLEAN AIR SOLUTIONS WEBINAR SERIES**

## **Multiple Benefits of Air Pollution Interventions**

10 December 2020

In Asia Pacific, over 90 per cent of the region's population are exposed to air quality levels that pose a significant health risk. Many air pollutants also contribute to the climate crisis and negatively affect the environment and ecosystems. These conditions threaten the region's sustainable development agenda. Fortunately, there are many solutions that can help beat air pollution, save lives, and protect our planet.

On 10 December 2020, over 100 participants from around the world joined a webinar co-organized with the Global Alliance on Health and Pollution (GAHP). The event introduced air quality interventions that provide multiple benefits for health and climate, and demonstrated with case studies their application in Asian countries.

- While some efforts — namely those that replace fossil fuels with renewable energy sources — improve both local health and favorably impact climate change, others, often politically popular programs are of limited value on either front. Ms. Shazia Rafi, Convenor at Air Quality Asia, drew on case studies from Pakistan to discuss overlaps where air pollution interventions improve health and also impact climate change.
- In Thailand, burning of agricultural residues is one of the major sources of air pollution, contributes to 35% of the pollution and is ranked second only to vehicles with diesel engines which were found to contribute to 54% of the pollution. Dr. Supat Wangwongwatana, Thailand Environment Institute spoke about their efforts in Thailand to engage farmers and ensure Thai policies help solve burning at its source.
- Every year, Hanoi produces approximately 1 million tons of straw and other agricultural residues. It is estimated that about 36% of these residues are burned – contributing to air pollution. Ms. Do Van Nguyet, Director at Live & Learn for Environment and Community in Vietnam shared their work in Hanoi to update the status of straw burning at district levels and identifying solutions to address this issue.

Watch the webinar recording through this link: <http://bit.ly/3nkzUXZ>.

### **About the Clean Air Solutions Webinar Series**

The webinar series, supported by US Department of State, aims to support outreach of the “Air Pollution in Asia and the Pacific: Science-based Solutions” developed by UNEP, APCAP and CCAC; and to serve air quality practitioners or communities of practice in this region by sharing information and experience on policy and technology clean air solutions available.

# The 22nd Session of the Intergovernmental Meeting on the EANET

2 December 2020

The 22nd Session of the Intergovernmental Meeting (IG22) on the Acid Deposition Monitoring Network in East Asia (EANET) was held virtually from 25-26 November 2020. It was concluded by major decisions on the approval of the Medium Term Plan (2021-2025) and Work Programme and Budget in 2021, as well as the decision to start expanding the scope of EANET's Instrument.

Over 50 representatives from 13 EANET Participating Countries joined the IG22 to discuss how they envision the future of their network. For 20 years, the EANET has been working specifically on acid deposition monitoring. The IG22 recognized activities related to air pollution as of major interest, although considered beyond the current scope of the EANET.

Marking an important milestone for the Network, Participating Countries agreed to start the process of expanding the scope of the Instrument allowing to work on wider air quality and air pollution issues in the near future. More information, including the Report of the Session, is available online: <https://www.eanet.asia/news-ig22-on-the-eanet/>



## REQUEST FOR CONTRIBUTIONS

Our quarterly newsletter contains a broad range of news and updates on clean air solutions. We are interested to hear about your experience on addressing air pollution in Asia Pacific. If you would like to contribute an article or event notice for our newsletter, please contact us at [apcap@un.org](mailto:apcap@un.org).

### Asia Pacific Clean Air Partnership (APCAP)

UN Environment Programme, Asia Pacific Office  
2nd Floor, Block A, UN Building, Rajdamnern  
Avenue, Bangkok 10200, Thailand  
Email: [apcap@un.org](mailto:apcap@un.org)

