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Haze Prevention: Transforming Agriculture Use?

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Synopsis

At the 19th Sub-Regional Ministerial Steering Committee on Transboundary Haze Pollution in Kuala Lumpur this week, ASEAN reiterated its commitment to a haze-free region by 2020. Could a long-term solution to preventing forest fires in Southeast Asia lie in alternative commodities that can grow in wet peatlands?

Commentary

MAJORITY OF forest fires in Southeast Asia occur in states which produce oil palm, according to Global Forest Watch. Forests are cleared to make way for oil palm plantations. To save on clearing costs, farmers resort to burning.

While frameworks to stop haze are being established at the regional level as well as in countries like Indonesia and Malaysia, the challenge remains to get on board the actors who presently benefit from drained peatlands -- the farmers, companies and investors profiting from oil palm. Could a long-term solution to preventing forest fires in the region lie in promoting alternative commodities that can grow in wet peatlands?

Root Causes of Peat Fires

The *sine qua non*, or the condition without which fires can start and spread, is the presence of dry peatlands. Peatlands are naturally wet swamps of decomposed matter. They are nutrient-rich, but extremely flammable when dry. Yet, farmers resort to draining these swamps because oil palm can only grow in dry soil.

The initiative of restoring peatlands to their naturally wet state has been emphasised

by Indonesia. However, unless the practice of draining peatlands is addressed, haze will continue to be a challenge.

At root is the choice of oil palm as the dominant crop for growing. This happens for two key reasons. First, oil palm is highly profitable and offers higher wages than other crops. The World Agroforestry Centre reports that oil palm in Indonesia yields profits of up to IDR 44 million to 295 million (USD22,000) per hectare per annum, and oil palm wages are two to seven times greater than average agricultural wages in the country.

The other reason is the short lead time in growing oil palm, taking three to four years before bearing fruit (with some gestation period before harvesting). This short lead time reduces the risks to investors who wish to invest in oil palm, in comparison to plants such as sago, which can take 10-15 years before harvest.

Search for Alternative Commodities

To prevent farmers and private companies from draining peatlands, it must be economically sustainable to keep them wet. Alternative commodities need to be leveraged that can be grown in peatlands while meeting three key conditions. First, they must grow in natural wet peat conditions.

Second, they must compete with oil palm in profitability, to translate into equivalent or higher wages to farmers, and returns to investors. Third, they must be able to reduce investor risk by having shorter lead time periods before harvest.

The FAO of the United Nations has already identified commodities that can grow in naturally wet peat conditions. These include sago, papyrus, wild rice, wetland taro, water celery, water spinach, and Chinese water chestnut. Apart from these, there are plants that can grow in moderately drained peatlands, such as rice, bananas, beans, carrots, celery, corn, lettuce, mint, onions, potatoes, parsley, radish, pasture-sod, sugar cane chili, soya bean, tobacco and a few horticultural crops.

The challenge, however, is that there is limited information on which of these commodities meet the second and third conditions, of comparable profitability and time taken before investors start getting net positive returns on their investments. Among the limited studies available, one shows that if sago was chosen as alternative crop to explore, it takes sago 10-15 years before it can start bearing fruit, and that the internal rate of return is up to 8.06%, still low compared to 20% if oil palm was planted.

Alternatively, some crops can be grown in less than a year, like radish or celery, but it is not known if there will be sufficient demand for these. Additional preparations may be needed, such as reducing the acidity of the soil, preventing pests and diseases, or increasing the value-add of producers through additional processing.

Researching Alternative Commodities

There is need for more research and institutional support in improving the desirability of producing alternative commodities, in both the demand and supply side. These

need to be considered in developing and implementing long-term rehabilitation plans.

Demand side interventions include research on identifying which among the identified alternative commodities are in demand, who the buyers are, what qualities and traits they desire, and what prices they are sold at. Buyers may include domestic buyers within Indonesia and Malaysia, as well as importers from higher income countries abroad. In Japan, for instance, youth are leaving the agricultural sector, creating opportunities for countries like Indonesia to provide select crops.

Supply side interventions require identifying technologies that can allow for meeting buyer requirements, while at the same time being cost effective to producers. Research will be needed in boosting yields in producing the commodities, such as through resistance to submergence/flooding, pests, and diseases.

For instance, if heavy research led to growth in the productivity of cassava production, from just six tonnes/ha to up to 30 tonnes/ha, can this not be done in the case of the crops identified by FAO? Along with boosting yields, it will also be important to hasten the time before crops can be harvested.

Research at the National Institute of Education, Singapore, for instance, shows that certain planting systems and growing environments can shorten grow-out periods. Agricultural transformation will have an important part to play in addressing haze, but this requires farmers, businesses, investors, academia, and governments play their part.

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